

JPRS-UAG-84-038

3 October 1984

USSR Report

AGRICULTURE

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MAJOR CROP PROGRESS AND WEATHER REPORTING

HARVEST PROGRESS IN VOLGA REGION REVIEWED

Moscow SOVETSKAYA ROSSIYA in Russian 26 Jul 84 p 1

[Article by A. D. Mikhaylov, director of the Main Production Administration of the Volga Region in the RSFSR MSKh [Ministry of Agriculture]: "Accelerating the Pace of Harvesting"]

[Text] The grain farmers of the Volga region must harvest spike crops from 12.3 million hectares. On 33 percent of this area grains have been mowed and on 25 percent--threshed.

The enterprises of Saratov and Kuybyshev oblasts are carrying out harvesting operations in a more organized manner than others. Here the pace of grain harvesting is greater than last year's. This was facilitated by the high-quality preparation of technology for harvesting and by an improvement in the system of moral and material incentives for machine operators and drivers. In Volgograd Oblast lags have been tolerated although harvesting began earlier than last year. Shortcomings in the organization of repair work and a shortage of spare parts and units had their effect.

At the present time over 5,000 harvesting-transportation complexes are at work in the Volga region. They include technical supply and cultural-personal service links. Crews of units work by shifts, maneuver equipment and alternate direct combining with swathe harvesting.

Among those who pay special attention to the quality of harvesting is the independent link of I. F. Balabanov of the Gigant Kolkhoz, Kalmyk ASSR. His unit works at a decreased speed, not leaving a single spike with the stubble. Also practiced here is nighttime preventative repair of equipment by master adjusters, which guarantees accident-free operation of units in the course of the day. The link has already completed the harvesting of grains on its own fields and is now helping neighbors. In general, independent collectives operate precisely, in a coordinated manner and achieve the best results.

The success of harvesting depends greatly on transportation workers. Tens of thousands of drivers are now participating in the transport of the harvest. Motor transport columns are being formed by the enterprises of Minavtotrans [Ministry of Automobile Transport], plants and factories and subdivisions of Sel'khoztekhnika [Agricultural Equipment Association]. Unfortunately, in

Volgograd, Astrakhan and Penza oblasts the creation of additional transport detachments has been delayed somewhat. There are shortcomings in supplying machines with spare parts. Because of this especially large numbers of GAZ-51 cars are laid up.

A characteristic feature of the current harvest is the close interrelationship of the harvesting-transport complexes with feed-procurement detachments. Leading enterprises have introduced the so-called non-accumulation harvesting technique in which straw is sent immediately to its place of storage. In the Volga region 20,000 combines have been equipped with straw crushers. Skilled craftsmen constructed trailers and carts to carry the straw out. The collection of chaff is also being organized. All of this will enable us not only to replenish feed reserves on farms but also to secure a work front for plowmen. Kolkhozes and sovkhoses have already prepared the soil for the sowing of winter crops on 1.5 million hectares.

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CSO: 1824/593

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST PROGRESS IN CENTRAL CHERNOZEM ZONE

Moscow SEL'SKAYA ZHIZN' in Russian 1 Aug 84 p 1

[Article by A. Trubnikov and A. Kat'kalov, Belgorod, Voronezh and Kursk oblasts: "To the Last Stalk"]

[Text] Agricultural workers of the Central Chernozem Zone are expanding harvest work. The machinery is equipped with devices to harvest low-growing and fallen grain. Do not allow any interval between cutting and threshing!

The grain fields of Belgorod, Voronezh and Kursk oblasts occupy more than 3 million hectares. To observe them with a bird's eye (and this is precisely what the authors did, from an airplane), quite a colorful picture appears. Let's say, in the eastern part of Kursk Oblast, the barley is a golden color, but in the rest--with a green tinge. Its plantings in the northeastern part have fallen. The grass crops and density of the winter crops differ. The Voronezh fields show the greatest contrasts, having especially suffered from drought.

How do the farmers overcome the difficulties arising from such conditions in the fields and aggravated by the changeable weather?

The wheat fields of the Korenevskiy imeni Il'ich kolkhoz lie adjacent to a reforested area. From a field trailer standing by a forest clearing, there is a good view of reapers and combines moving in our direction. The barley lies down in rows. The machine drivers are P. Shaparev, V. Yangolenko, M. Shcherbakov, A. Anikayenko and A. Koltunov. Together with kolkhoz Chairman I. Kolkutin we examined the rows and failed to find a single lost grain stalk. In the neighboring field the machine operators have begun threshing operations. The combines were quickly finished with the work and driven off by operators V. Grigorenko, P. Martynenko and P. Bunchukov. On the stubble field there was not a straw, in the straw stacks--not a single grain.

"Large-group use of equipment helps us to bring in the harvest at the optimum times and without losses," says the chairman. "This method is used everywhere," continues I. Gruzlov, first secretary of the Korenevskiy CPSU raykom. "In the rayon there are 15 active harvesting and transport complex teams and 27 detachments."

We observed their efficient work at the kolkhozes Leninskiy Priyiv, Bolshevik, imeni 8 March and Zarya. Everywhere that we had an opportunity to visit in Kursk Oblast, we saw many examples of a creative attitude toward the organization of the harvest. At the kolkhoz imeni Il'ich in Khomutovskiy Rayon, more than one month's worth of precipitation occurred in a 10-day period. But the harvest did not stop, although it was slowed. At this kolkhoz, and incidentally at other farms too, it was decided in advance which crops were to be harvested directly: standing grain dries more quickly, two-three hours after a rain. But when the swaths "come up," all forces are switched over to picking them. Equipment is assigned to rake and turn the swaths. Both halves of the GVK-6 rakes are used, or else combine pick-up devices attached to the side-reapers.

In the eastern regions of the oblast, where low-growing crop tracts predominate, special attention is paid to cutting height. To keep it low, the following was done: the support shoes were removed from the reapers and the spring unit tension was adjusted. Now the operators are able to achieve the minimum cutting height of up to five centimeters.

The grain growers of Voronezh Oblast today are working with the motto: everything that is grown we will harvest, to the last stalk, the last grain. From the first days of the harvest many machinery operators proved themselves to be high-class masters. At the Progress kolkhoz in Rossoshanskiy Rayon the Komsomol youth links of A. Dudinkov and V. Dan'kov brought in 1.5-2 times the daily norm every day in cutting peas and picking up the swaths.

Good preparation of equipment, efficient and coordinated work, and 640 harvesting and transport complex teams make it possible to bring in the harvest at a high rate. 230,000 hectares of peas were quickly cut and threshed, the reaping of winter wheat and rye on 350,000 hectares is coming to an end, and the barley harvest is proceeding at full speed.

The unfavorable conditions of this year's summer dictated harvest tactics and technology to the grain growers. To repeat, the shortest height is being used for cutting, and at a minimal speed. The air-tightness of the combines has been made as reliable as never before. The main objective is to process all harvested grain using only seed-growing techniques, fully supplying all the farming enterprises with their own seeds. Such a possibility exists--the winter crops, especially on fallow fields, have

withstood the weather's adversities well at a number of farms, and produced good seeds.

The same is indicated by reports arriving from other localities. In the kolkhozes imeni Michurin, Rodina Pyatnitskogo, Talovskiy, and at individual enterprises in Olkhovatskiy, Paninskiy, Novousmanskiy, Nizhnedevitskiy and Ramonskiy rayons, winter wheat in fallow fields is providing a good harvest in addition. There is confidence that these and a number of other rayons will not only supply their own needs in winter crop seeds, but will also augment State stocks!

The Belgorod grain growers are also bringing in the harvest at a high rate. In the majority of the fields here, the harvest is brought in by unregulated brigades and links. They skillfully combine the large-group use of equipment with collective contract work. In those few cases where a harvesting and transport complex team services two contractual subdivisions, it works only on the reaping and threshing, and with a strictly differentiated accounting of expenditures and its own harvest.

There is a multitude of examples of work intensity. Machinery operator A. Kakotkin from the kolkhoz Bolshevik in Krasnogvardeyskiy Rayon brought his daily threshing yield up to 364 quintals, which greatly exceeds the target. Up to 1.5-2 times the norm for threshing is also produced by combine operators V. Os'makov from the Rakityanskiy Rayon kolkhoz imeni Lenin, V. Vereyko from the Shebekino kolkhoz Druzhba, and V. Smorodinov from the Borisovka kolkhoz Krasnyy Oktyabr'. Often the harvesting is not suspended even in inclement weather--as long as the grain can be threshed well. Its increased moisture causes no alarm: there are enough dryers available at the enterprises and grain-receiving stations to dry all the grain without delay.

This is probably the first year that the expression "wastefree harvesting technology" has appeared in the Central Chernozem Zone. The channels of losses not only of grain, but also of straw are being reliably shut off. In threshing control tests at many farm enterprises in the zone, output yields of both types are recorded, and the combine operators' wages depend on the total bulk harvested. The stackers have been sealed with canvas or leatherette liners in order to avoid losses. For the same purpose rope straw sweeps are no longer used, and the pusher straw sweeps were equipped on their lower beam with cultivator blades, which are located at ground level and prevent straw losses. The blades were installed on hinges.

The list of examples of a thrifty attitude toward the crops grown and of skillful use of equipment could be continued. But there are many instances of another kind as well.

Idle time of harvesting machinery is still significant in Staroskol'skiy and Korochanskiy rayons of Belgorod Oblast, Zheleznogorskiy and Konyshovskiye rayons of Kursk Oblast, and in Ramonskiy and Rep'yevskiye rayons of Voronezh Oblast. The reason--organizational and technical troubles. Delay in harvesting has always led to losses. This year, however, delay is dangerous as never before. The fields under barley, which constitutes the bulk of the spring crop area, were expanded in connection with the resowing of the winter crops. It is well-known, however, that with the slightest overripening, and especially in rainy weather, the stalks "bite" the ground. Instances of a significant delay between reaping and threshing are alarming.

Carelessly harvested fields are also encountered, where one can see patches of lost straw and uncut and un-threshed stalks. In some places delays in the start-up of dryers are hardly justified, and for this reason the harvesting stops during changeable weather.

In any oblast, rayon or farm enterprise of the Central Chernozem Zone there exists the possibility to speed up the harvesting work and improve its quality.

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CSO: 1824/609

MAJOR CROP PROGRESS AND WEATHER REPORTING

HARVEST RAIL TRANSPORT STARTS FROM KAZAKHSTAN

Moscow SEL'SKAYA ZHIZN' in Russian 8 Jul 84 p 1

[Chimkent, 7 July (TASS) article: "Into the Granaries of the Homeland"]

[Text] The green light is showing to trains carrying grain of the new harvest. Workers of the Alma-Ata Railroad today sent to Uzbekistan the first trainloads of grain raised by the farm workers of Chimkent Oblast.

Emulating the initiative of Baltic workers, engineers of the diesel locomotives are increasing the weight carried by their trains. The 10,000th heavy train since the beginning of the year has already passed through the Chimkent section of the railroad. It was driven by the outstanding engineer R. Miftakhov. Efficient organization of the work of all services helps to increase the gross weight of freight trains. Dispatchers give the green light to heavily loaded trains on the difficult portions of the track, and the engineers guarantee their passage at high speeds. This made it possible to increase the volume transported without overexpenditure of fuel.

In the south of Kazakhstan, where a major zone of guaranteed harvests of grain, vegetables and sugar beets has been developed, railroads transport large quantities of agricultural products. Special attention is devoted to eliminating losses during loading and transportation, and rail spurs to elevators and fruit and vegetable storage bases are being thoroughly readied.

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CSO: 1824/598

MAJOR CROP PROGRESS AND WEATHER REPORTING

CONFERENCE REPORTS ON KAZAKHSTAN HARVEST

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 21 Jul 84 p 2

[Tselinograd (KazTAG) article: "Republic-Wide Seminar Conference"]

[Text] Ways to increase the efficiency of using harvesting equipment and transport vehicles in the harvest-84 and the procurement of agricultural products were discussed at a seminar conference held here.

Deputy Chairman of the Kazakh SSR Council of Ministers T. B. Kuppayev opened the seminar with his introductory remarks.

Speakers Minister of Motor Transport KaSSR A. R. Karavayev, Deputy Minister of Agriculture of the republic A. K. Tomashets, Minister of Procurement KaSSR N. N. Klevtsov and others noted the importance of experience in progressive organization of the function of transport facilities, harvesting equipment, equipment at threshing facilities of enterprises and grain receiving enterprises.

Extensive use is made of large-group operation of combines, the shift method of harvesting, combine-trailer and batch systems of servicing the combines with the use of turn-around trailers and grain storage-transloaders. Centralized wheat procurement methods are used on hourly schedules generated by a computer. Centralized motor vehicle groups equipped with large-capacity tractor-trailer combinations have shown good results.

The assembly learned of the use of advanced technology of organizing the harvesting and transport of grain.

First Secretary of the Kazakhstan Communist Party obkom N. Ye. Morozov addressed the seminar conference.

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CSO: 1824/598

MAJOR CROP PROGRESS AND WEATHER REPORTING

ROLE OF TRUCK TRANSPORT IN KAZAKHSTAN HARVEST

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 17 Jul 84 p 1

[Unsigned article "Harvest Transport"]

[Text] Comprehensive organization of harvest transport operations is an index of today's level of agricultural production and technical progress in the sector. And speaking today of bringing in and transporting the harvest, we mean first of all a continuous flow in the organization of labor through the entire path traversed by grain from the field to the elevator. The conveyor field--threshing floor--elevator is operating everywhere during the harvest period. It is placed in motion by a powerful mechanism, now called the harvesting and transport complex.

All links of this mechanism are important, but a special role is played by transport, without which movement of the grain conveyor would be unthinkable. The output of harvesting machines, the dates of crop deliveries, crop quality and safekeeping depend on the efficient operation of motor vehicles and other means of transport in the fields and on the roads. The CPSU Central Committee and the USSR Council of Ministers have issued a special decree "On additional measures to provide motor vehicle transport of agricultural products during the 1984 harvest period in the RSFSR, the Ukrainian SSR and the Kazakh SSR." It sets the goal for agricultural, procurement and transportation organizations and enterprises to implement a set of measures aimed at the efficient use of motor vehicles in transporting the harvest and the broad introduction of advanced labor organization methods.

Drivers of motor vehicles face the accomplishment of an enormous amount of work during the harvest period. Practically all grain is hauled from the fields to the threshing and grain receiving stations by motor vehicles. But there is still a shortage of them in rural areas. For this reason, at the time of mass harvest transport, the sovkhozes and kolkhozes are assisted by specialized transportation enterprises and motorists of organizations in the sector. In our republic, up to 80,000 motor vehicles are additionally sent to rural areas annually. The redeployment of each thousand vehicles costs from 500,000 to 1.8 million rubles. The State is willing to make such expenditures because the value of the grain is far greater.

The duty of drivers is always the same: to ensure the timely transport of the harvest from the fields to the threshing and grain receiving enterprises with

the smallest losses and at minimal cost. To do this it is necessary to organize efficient and non-stop operation of the transport conveyer, making broad use of advanced transportation methods.

A special role is assigned to motor vehicle transport in harvest operations. The time required for grain threshing has been significantly reduced in recent years due to the introduction of advanced harvesting technology. But this could be even less. The loss of working time is still great in the fields due to various reasons, one of which is the lack of skill in using motor vehicles for transport.

Scientific organizations and specialists are working on this problem. And the search is not fruitless. Ever increasing use is made in Kazakhstan of the combine-trailer and batch methods of hauling grain from the fields to the threshing facilities, which has proven itself in practice. Large-capacity tractor-trailer units are used to transport grain to the receiving stations. The hauling of grain to many elevators is organized by shift and daily norms, as well as by hourly schedules. Centralization of the means of transport and of the management of grain hauling is practiced.

It has been calculated that the use of the combine-trailer method of hauling grain from the fields to the threshing facilities increases the productivity of motor vehicles by 3-5 times, labor costs are reduced to one-third, and transportation costs are reduced by 30 percent. A great benefit is derived from the use of the batch method with a fixed disposition of transport vehicles in the fields. In Sergeyevskiy Rayon, North Kazakhstan Oblast, one motor vehicle depot services six sovkhoses instead of the previous two with the same number of motor vehicles through the introduction of the combine-trailer and batch methods.

These advanced transport methods are being used successfully at a number of farming enterprises in Karaganda, Tselinograd, Kokchetav and Kustanay oblasts. For the republic as a whole, however, only about 10 percent of the harvest machinery is being used with the combine-trailer method, and even less by the batch method.

The Ministry of Agriculture and the Ministry of Motor Transport have recently developed joint measures to increase the efficiency of using harvesting equipment and means of transport during the period of the harvest and crop procurement. It is currently planned to organize combine-trailer and batch methods of operation in 2,600 composite brigades. 22,000 combines will be serviced by these methods. They are being assigned over 18,000 trailers for turn-around operation. More favorable conditions for the introduction of the batch method are arising at the enterprises due to an extensive shift of harvest brigades and links to the collective contract method.

However, the measures being taken will give a tangible result only if monitoring of their implementation is properly organized. This must become part of the responsibility of the councils of agro-industrial associations, managers and specialists of sovkhoses and kolkhoses, and officials of motor transport organizations.

While the enterprises are suffering from a shortage of transport vehicles, it is necessary to make better use of available reserves. The correct way is pursued in those places where tractors are used for grain movement, instead of waiting for outside assistance, where storage bunkers are used and intermediary threshing facilities are built in order to shorten the distances traveled by motor vehicles, and where there is concern for mechanization of unloading and loading operations which reduces vehicle idle time.

The organization of grain transport to the grain receiving stations and its acceptance there requires further improvement. Efficient coordination of the work of sovkhozes and kolkhozes, motor vehicle transport organizations and procurement officials is needed here. Each year more than 20,000 tractor-trailer combinations take part in delivery of grain to the elevators, with one-quarter of these having two or more trailers. Many drivers operate high capacity truck and trailer combinations weighing 60-80 tons and more.

The use of truck-trailer combinations doubles labor productivity and reduces the costs of transporting the harvest by 30-40 percent. But here too, there are many difficulties. The truck-trailer combinations often stand idle during loading and unloading due to inadequate equipment at the threshing facilities and to sluggishness of workers at grain receiving enterprises. It is necessary that heavy-duty motor vehicles be given the green light everywhere. Then their turn-around time will be shorter and they will deliver more grain at lower cost.

The efficiency of motor transport operation in hauling the harvest depends to a large degree on effective organization of the receiving of grain. It must not stand idle at the gates of elevators, on scales and in unloading. The shipment and reception of grain must be organized on an hourly schedule. There is experience in doing this in the republic. With grain delivery on schedules, transport vehicle idle time during loading and unloading is reduced by 70 percent, and labor productivity rises by 30 percent.

By the beginning of mass grain transportation, it is necessary that the procurement and motor transport workers jointly with councils of agro-industrial associations develop a precise plan for operations, set up centers for grain delivery management, form centralized motor vehicle detachments consisting of high-capacity trucks, and organize dispatcher and information stations at the enterprises. It is planned this year to organize deliveries of grain by shift and daily norms and on hourly schedules to more than 160 elevators and grain receiving enterprises. Preparations must be made for this in advance.

Special care must be taken to provide normal working and living conditions for the drivers engaged in harvesting and transport of the crops. It is well-known that the majority of them will be working in field conditions. Mobile motor vehicle camps must be organized for them, as is done in the leading motor vehicle enterprises. These must contain functioning repair facilities, maintenance stations, spare parts exchange shops, food and bath facilities, and rooms for recreation and reading must be provided. Unfortunately, the editorial offices of KAZAKHSTANSKAYA PRAVDA receive letters every year from drivers engaged in harvest work in some regions about unsatisfactory living conditions.

The borders of the harvest in Kazakhstan are being expanded. Work on bringing in the grain harvest is already under way in five oblasts in the south and the west of the republic. The day is not far off when the harvest drive also comes to the main grain field--the virgin lands. Every effort must be made to be fully ready for it, so that the harvesting and transport complex would function uninterruptedly.

2388

CSO: 1824/598

MAJOR CROP PROGRESS AND WEATHER REPORTING

DURUM WHEAT PLANTING SHORTFALL IN KAZAKHSTAN

Moscow PRAVDA in Russian 30 May 84 pp 1-2

[Article by PRAVDA correspondent Ye. Zaitsev: "For the Sake of Durum Wheat"]

[Text] The sowing campaign in the Kazakhstan virgin lands is coming to an end. Tens of thousands of machines are working in the fields, amalgamated into links and complexes. Two-thirds of the areas are assigned to contract collectives. This **has** made it possible to noticeably improve labor discipline and increase the output.

The virgin lands workers have planted varieties of durum wheat on part of the fields. It has special properties...

Each of us has had occasion to buy noodles. In any food store you will be offered several varieties and grades. But as soon as packages of long, thin, amber colored products are placed on the counter, special interest is aroused. These noodles are tastier and more nourishing than ordinary ones, and do not cook apart when boiled. They are made from durum wheat flour. Durum wheat does not constitute such great volume of the total quantity of grain procured. But alas! In recent years the plans for its procurement have not been met. What are the reasons?

Durum wheat is grown in steppes with a hot, dry summer. In our country there is a good zone for raising it, from the banks of the Volga to the Altay region. More than half of the plantings are located in the northern and western regions of Kazakhstan. But not a single oblast in the republic during the current five-year plan has fully planted the areas necessary for fulfilling the plan for durum wheat procurement. This year it was planted on 104,000 hectares in Kustanay Oblast, 80,000 in North Kazakhstan Oblast, and in other oblasts on several tens of thousands hectares each. From such a area even half of the plan procurements will hardly be met.

"It is the effect of last year's drought," explains chief of the Main Agricultural Administration of the Ministry of Agriculture of the republic V. Kosarev.

He is partially right. But the problem lies not only with the drought. After all, it did not bypass the fields of Fedorovskiy Rayon in Kustanay Oblast. But

good results were achieved here. First of all because several enterprises specialize in growing durum wheat. The machinery operators have fathomed its "secrets" and obtain a stable harvest in any weather conditions.

The experience of the Kustanay kolkhoz Put' k kommunizmu is instructive.

"In 1982," relates chief agronomist A. Volkovskiy, "we harvested an average of 23 quintals per hectare and sold the State 5,400 tons of durum wheat. And of excellent quality, the bonus for high quality was over 360,000 rubles. We also met the plan last year."

Two varieties of it are grown here: "Bezenchukskaya-139" from the Kuybyshev selectors, and "Almaz" from Omsk, chosen by A. Volkovskiy after testing. This year, as in previous years, they were given the best predecessor crops in the crop rotation system: fallow land, corn and perennial grasses.

But durum wheat does not receive such attention everywhere. Science too did almost no work on development of agricultural practices in soil cultivation. Agronomists noticed long ago that its yield when planted twice in a row on the same field is sharply reduced. Elementary mistakes are still being repeated. Even at the seed growing enterprise, incidentally the only one in the oblast, the training farm of the Tselinograd Agricultural Institute, the year before last a part of the plantings were situated in fields after wheat.

A year ago, at the All-Union Scientific Research Institute of the Grain Industry a durum wheat problems laboratory was organized. A few things have already been accomplished, the first recommendations by scientists have been issued.

But the problem is not only in the level of agricultural practices. Let us return to that same Tselinograd Agricultural Institute. The seed crop yield here is low, since more than half of the fields have alkaline soil. And the precipitation is also low, especially in the first half of summer, when the plants need moisture most. Specialists have suggested shifting primary seed growing to another enterprise, where conditions for growing durum wheat are better. The oblast institutions are capable of resolving the issue, but no one has looked into it yet.

In order to ensure a supply of high quality of seeds to the fields, as specialists of the newly organized laboratory of the All-Union Scientific Research Institute of Agriculture propose, two or three specialized enterprises could be assigned in each oblast to produce them, or even better, a region.

Economic obstacles also hinder widespread expansion of durum wheat. At first glance it is profitable to produce it, the purchase price is higher than for soft wheat. An enterprise can even receive a double bonus. What agronomist or enterprise manager would refuse such a gain? Then why does durum wheat "not go"? Let us try to examine this.

Only about half of the wheat procured in the country is accepted with a 100 percent bonus. At times even less than that. Even the Put' k kommunizmu kolkhoz, where grain of first-class cleanness is produced, sometimes loses out.

Last year this enterprise failed to receive even a ruble of bonus. It rained during the entire harvest. They had to deliver the wheat with a high moisture content. For this reason the grain unit weight (weight of one liter of grain) dropped to a minimum level, at which no bonus is due. And although the needed weight was restored after drying the grain at the receiving station, no bonus was given the enterprise.

"The current conditions for deliveries of strong and durum wheats," says kolkhoz Chairman A. Gabun, "are more advantageous to the procurement people." If we bring grain with moisture and contamination exceeding the standard, we will be ruined. But the grain receiving station, having spent kopecks on additional processing, receives profits for the strength and the hardness of the wheat. For the properties attained by the labor of grain farmers. At all conferences we propose that grain quality be determined after the additional processing. The kolkhozes and sovkhoses are willing to pay the elevators for the services, but the bonus for quality should belong to the grain growers."

A similar viewpoint is also expressed by other officials of enterprises and rayons. It would seem that with the organization of rayon agro-industrial associations, to which grain receiving enterprises also belong, the situation should have changed. But it was not so. Last fall the council of the Uritskiy RAPO in Kustanay Oblast decided that the grain quality analysis should be done by the grain receiving station after its finishing treatment. Telegrams started flying from the Ministry of Procurement of the republic to all oblasts in North Kazakhstan: we forbid this, receive and fix the price as before.

Little has changed in analysis techniques since the setting of bonuses for strength and hardness of wheat. Today grain translucence is still determined by the eyeball method. It is cut in half. With a bright sparkling of the cut surface, it is considered of standard translucence. With a dull appearance it is poor quality. And no agronomist could prove that the cut was maybe performed wrong, causing grain cloudiness. And any mistake, even an unintentional one, leads to losses. Here, for example, are two neighboring rayons in Tselinograd Oblast, Shortandinskiy and Tselinogradskiy. The conditions of growing, harvesting and delivering durum wheat in their enterprises were approximately the same. But in the first, bonus paid per quintal of grain was 8.33 rubles, and in the second--4.9 rubles.

The kolkhozes and sovkhoses suffer most often from errors which are unavoidable with a low technical level of analyses. It is time to equip the procurement enterprises with the necessary instruments. It would do no harm to listen to the suggestions of economic workers who are convinced that the laboratories should be taken out of sector jurisdiction.

Much criticism is also evoked by an excessively rigid category scale for durum wheat. There are only three, with bonuses of 100, 70 and 20 percent. To what does this lead? Grain with 25 percent gluten, for example, is received as second class, but with 24.4 percent--as third. The monetary difference is 50 percent of the maximum bonus. In other words, half of the basic value of the grain. As we see, a fraction of a percent has a perceptible impact on economics. The trouble is also in the fact that the laboratory technician determines

gluten manually as well, and frequently makes errors. Specialists are convinced that the method of quality determination needs to be changed. Many feel that protein content should be the basis for quality evaluation.

Durum wheat is less productive than soft wheat. But the competition results are determined by average threshing yield. And those planting larger areas in it wind up the losers.

"A differential coefficient should be established," considers Academician A. Barayev of the All-Union Order of Lenin Academy of Agricultural Sciences imeni V. I. Lenin. "Without objective determination of a most important indicator--productivity taking grain quality into account, the enterprises would be unwilling to expand durum wheat plantings."

His viewpoint is supported by many directors of sovkhozes and chairmen of RAPO councils. If such a coefficient is introduced, a great moral and material incentive would appear.

In a word, there are many questions. And they must be resolved. The lagging of production and procurement of durum wheat cannot be condoned.

It is well-known that in industry, plant directors are taken severely to task if their enterprises fail to meet contractual commitments for a list of products. In agriculture, however, it often happens that the procurement plan is fulfilled with one kind of grain. I cannot recall a case of a party raykom or RAPO council holding a sovkhov director responsible for failing to meet the plan for durum wheat sales, if the enterprise met the plan for gross output. If the responsibility for a specific crop is reduced, attitudes toward it change. It is precisely here, in a shortage of attention, that one of the causes of the shortage of durum wheat would seem to be found.

2388

CSO: 1824/606

MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

KAZAKHSTAN SPRING PLANTING COMPLETED--Alma-Ata (TASS) 2 [Jun]--The agricultural workers of Kazakhstan today completed their spring field work in optimum time and with high quality. It was performed on the gigantic spring planting fields covering over 28 million hectares. Twenty-five million of these were allocated to grain crops. Of these, 15 million hectares--considerably more than planned--to spring wheat. The rice plantings were expanded in comparison with last year. More leguminous crops, sugar beets, cotton, vegetables and potatoes were planted than required by plans. The efforts of farm workers to earn the Emblem of Quality for every field this year were headed by more than 10,000 field brigades which had switched to the collective contract method. The preparation of lands in the autumn played an especially important role in accelerating work in the conditions of this year's cold, late spring. The farm workers turned over moisture in the soil on schedule, rapidly placing the seed in the ground. An average of 1.5 million hectares and more were planted daily. Simultaneous sprouting has already occurred on the majority of the tracts. Cultivation of the plantings is proceeding on a broad front in the spring fields. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 3 Jun 84 p 1] 2388

EAST KAZAKHSTAN HARVEST BEGINS--Semipalatinsk 31 [Jul]--Tens of trucks have delivered grain from the new harvest to the Urdzharskiy grain receiving station. In connection with this event, the traditional meeting was held in the rayon center. On the first day more than 1,000 tons of grain was sold to the State. This year a total of 36,500 tons of it will be sent from the rayon to the granaries of the homeland. Competing with the farm workers of Urdzharskiy Rayon, the workers of Makanchinskiy Rayon sent over 800 tons of grain to the elevator in one day. A total of no less than 58,000 tons of it will be sold to the State. [SEL'SKAYA ZHIZN' stringer Ye. Anakin] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 1 Aug 84 p 1] 2388

KAZAKHSTAN PLANTING OPERATIONS COMPLETED--Aktyubinsk (KazTAG)--The difficult spring weather conditions failed to disturb the rhythm of planting operations. Each hour is being used efficiently. The farm workers of Mugodzarskiy Rayon managed to complete grain sowing in 8-10 days. Agronomy posts were established in all brigades here to perform a daily field survey. Appropriate corrections were entered into the routing schedules of the machinery, and the number of passes was reduced without detriment to quality. Previously a large detachment of machinery would usually go out to a certain field of 200-300 hectares and begin working there when the soil "ripened." Now the fields are broken down in

three or four sections in advance, which are then worked and planted taking into account the moisture and warming of the soil, and also the germination of weeds. The method of localized planting makes it possible to accelerate work and retain a maximum of moisture in the soil. The machinery operators of Uil'skiy, Temirskiy and Khobdinskiy rayons are completing planting operations. The planting pace for the oblast as a whole is significantly faster than last year. Grain crops have already been sown here on 1.5 million hectares. The seeds are set with anti-erosion sowers, and attachments for rolling and leveling the soil are used. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 17 May 84 p 1] Pavlodar--The first 100,000 hectares of grain crops, primarily wheat, have been planted at the oblast enterprises. Mass sowing is under way in the southern and central rayons. The areas planted in the primary food crop are expanding everywhere. The sovkhoses and kolkhoses are extensively applying mineral fertilizers into the furrows. Special attention is paid to preserving moisture in the soil. The tracts are planted and compacted immediately after cultivation and weeding. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 17 May 84 p 1] Field work is under way at full speed on the lands of East Kazakhstan. The enterprises of the oblast have planted 150,000 hectares of grain crops, nearly a third of the planned total. Winter crops are turning green and gathering strength on an area of 42,000 hectares. [Excerpt] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 17 May 84 p 1] 2388

KAZAKHSTAN SPRING PLANTING UNDERWAY--By May 16 spring crops were planted on 19 million hectares in the republic, which constitutes 67 percent of the plan. Of this total, 15.3 million hectares are under grain. Wheat, the primary food crop, occupies 11 million hectares. About 1.5 million hectares of grain were sown yesterday. More than 300,000 hectares were planted in Kustanay Oblast; in Tselinograd and Kokchetay oblasts--240,000 hectares each, and 200,000 hectares in Turgay Oblast. Application of mineral fertilizers into the rows is practiced everywhere simultaneously with sowing wheat. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 26 May 84 p 1] 2388

EAST KAZAKHSTAN HARVEST STARTS--Semipalatinsk Oblast--The first new-crop grain truck column received a friendly welcome at the Urdzharskiy grain receiving enterprise. The procurement workers presented the farm enterprise representatives with a splendid welcoming loaf of bread and salt. Then a meeting was held during which the agriculture workers stated that they will do everything possible to fulfill the socialist commitments for grain delivery in the fourth year of the five-year plan. And the flow of grain into the storage facilities has already begun. In the neighboring Makanchinskiy Rayon the harvest campaign is also gathering speed. Grain crops occupy more than 100,000 hectares here. Nearly 400 combines have been brought onto the fields. The field to threshing facility to elevator conveyer is functioning efficiently. The rayon party committee has sent an additional 280 party members to the harvesting-transport complexes. Sixty party and party-komsomol groups have become organizers of the competition. Good news is arriving from the Krasnyy Partizan kolkhoz and the sovkhoses Arkaldinskiy, imeni Furmanov, and Zharbulakskiy where the grain crop has already been cut on more than half of all fields. Valuing every hour of fair weather, the farm workers are accelerating the pace of harvesting work. On some tracts the cereal grains are low-growing, there are fields where strong winds have laid down a portion of the grain, and a great deal of skill

and experience is needed to avoid leaving even one stalk in the fields. The harvest front is gradually shifting into other areas of the Semapalatinsk region near the Irtysh River. The efforts of rural workers are aimed at threshing the grain quickly and without losses, and at bringing in the harvest to the last grain. [By L. Resnikov, correspondent of KAZAKHSTANSKAYA PRAVDA] [Excerpt] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 25 Jul 84 p 1] 2388

RIVER GRAIN TRANSPORT READY--Semipalatinsk 5 Jul--The river transport workers of the Upper-Irtysh Shipping Line will help to speed up the delivery of the harvest from the distant regions of East Kazakhstan to the elevators. They completed preparation of vessels for grain transport one week ahead of plan schedule. About 20 large-tonnage barges, powerful towboats and motor vessels have been supplied with the necessary equipment. Berths have been placed in order, and riverside roads and rail spurs have been improved. "We are awaiting the upcoming harvest with full equipment," said V. Vtyurin, chief of the Upper-Irtysh Shipping Line, to the TASS correspondent. "Everything has been done so that the grain would go to its destination on time and without losses. An hourly schedule for movement of cargo vessels will be instituted on the blue main line. Not only crews of vessels, but also rail and port workers will be responsible for maintaining it. Shallow places were dredged deeper prior to the beginning of transport, and piers have been equipped with high-capacity loading and unloading machinery. In handling the grain caravans, wide use will be made of the experience of Leningrad workers, who organized an uninterrupted transport conveyor. A railcar repair shop is functioning in the port, making it possible to speed up the turnaround factor of the rolling stock by more than three times. Rail workers, motor vehicle drivers and workers at grain receiving stations will be shifted to the same regulation system as the dockers. Tens of thousands tons of grain will be transported on the main waterway of Kazakhstan this year. [Text] [Ashkhabad TURKMENSKAYA ISKRA 6 Jul 84 p 1] 2388

ONGOING FIELD PREPARATIONS--Alma-Ata Oblast--However, the concerns of grain farmers are not limited to the present harvest. In the rayon special enterprise association fields are immediately freed of straw; it is moved to a central farmstead, where later it will be placed in silage trenches in mixtures with green mass of sunflowers, corn and sorghum. Tractors with plows are following combines into the fields. [By D. Gutenev] [Excerpt] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 10 Jul 84 p 1] 8228

HARVESTING READINESS--Alma-Ata--The enterprises of the capital oblast have begun harvesting spike crops. All of the attention of machine operators has been focused on avoiding losses. Combines and truck bodies have been carefully sealed. Reapers have been adjusted for low cutting. The technical servicing of machines in the fields has been organized everywhere; field machines have been prepared. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 11 Jul 84 p 1] 8228

HARVESTING BEGINS--Dzhambul Oblast--Harvesting operations have begun in Dzhambul Oblast. Over 300 harvesting-transport complexes have moved into the fields. They must thresh grains on an area of 570,000 hectares. [By A. Korsunov] [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 1 Jul 84 p 1] 8228

VARIED HARVEST--The grain farmers of Alma-Ata Oblast have begun the mass harvesting of early spike crops. Here grains occupy 412,000 hectares. Unfavorable weather conditions--a cold spring followed by exhausting heat in May and June--resulted in the fact that dry farming land turned out not to be fertile, and it makes up nine-tenths of the sowing area. However, foothill land, especially that which is irrigated, has gladdened farmers with ears. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 11 Jul 84 p 1] 8228

EFFICIENT HARVESTING METHODS--Kazan'--Mass harvesting of winter rye and peas has begun in the Tatar ASSR. The field of grains and pulse crops here is one of the largest in the Central Volga region--an area of 2.1 million hectares must be harvested. In order to do this in a compressed period of time and without losses the experience of past years is utilized. Following the example of Ipatov farmers 844 harvesting-transport complexes have been created here. Collective contracts have been introduced in many of them. The work tone is being set by the grain farmers of the Gigant Sovkhoz. "The quality of work is of primary importance," says the sovkhos director, Hero of Socialist Labor N. Ziatdinov. "We are harvesting according to the two-stage method. There has been a significant increase in the number of reapers, which enables us to utilize combines only for threshing grains. [By N. Sorokin] [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 26 Jul 84 p 1] 8228

RICE SOWING--Astrakhan', 16 May 84--The oblast's rice field occupies 50,000 hectares. The sowing period has begun there now. Hundreds of units have moved onto the check plots. Some are involved in the pre-sowing preparation of the soil, others--in sowing. Many enterprises of Kharabalinskiy Rayon are a good example of a high level of organization. For example, in the Rossiya Kolkhoz all work is being done in a single complex. Land levellers are followed by discing units and by cultivators with harrows when necessary. Most machine operators overfulfill output norms. The sowing units of the Kolkhoz imeni Kirov, the Krasnyy Partizan Kolkhoz and others are operating precisely and in a coordinated manner. [By A. Golovko] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 17 May 84 p 1] 8228

TRUCKS AID HARVESTING--Petrozavodsk--Three special trains are following the route, "Petrozavodsk-Astrakhan'" from the capital of Karelia. They are carrying 300 trucks, which are to participate in the shipment of the new harvest of vegetables, melons and rice cultivated on the lower reaches of the Volga. A total of 400 trucks were sent to the enterprises of Astrakhan Oblast from Karelia. Some of them--100 trucks--were sent to the south under their own power. Along the way they will supply consumers with over 1,000 tons of various products. These include faced marble slabs, cast iron moulds, tractors and other products. "We are sending our best and most experienced drivers to the new harvest," said the deputy director of Karelavtotrans [Karelian Motor Vehicle Transportation Association], Ye. P. Dariy. "This is not the first time that truck drivers from our republic are moving out to the site of harvesting operations. Their selfless labor on the country's fields has received a high evaluation by farmers. [By V. Shevtsov] [Text] [Moscow TRUD in Russian 21 Jul 84 p 1] 8228

EQUIPMENT READIED--Belgorod, 15 Jun 84 (TASS)--All harvesting equipment in Belgorod Oblast has been readied. The machine operators of kolkhozes and sovkhozes have adjusted the last machines, which have been carefully examined and broken in. Work could be completed half a month earlier than planned as a result of the dependable repair base developed in each rayon as well as of the organization of specialized brigades in Sel'khoztekhnika [Agricultural Equipment Association]. Many enterprises with their own shops carried out repairs locally. Machine operators will reequip combines for harvesting grains with a low cut. Machines are being sealed in order to avoid losses of grain and straw. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 16 Jun 84 p 1] 8228

INDEPENDENT LINKS--Belgorod, 13 Jul 84 (TASS)--Independent links have joined harvesting operations, which have begun on oblast fields. Over four-fifths of the entire area in grains and industrial crops has been assigned to cost-accounting subdivisions. Over 420 harvesting-transport complexes, created on the basis of independent detachments and links, have prepared carefully for harvesting. In utilizing the advantages of collective contracts, oblast farmers plan to complete harvesting in 12 work days. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 14 Jul 84 p 1] 8228

WEIGHTY OBLIGATIONS--Great obligations were taken on here this year--to harvest an average of at least 23 quintals of grain per hectare and to sell the state at least 730,000 tons of grain. Oblast enterprises completed raising autumn plowland at the same time, 423,000 hectares of winter crops were sown and highly conditioned spring seed has been put into storage. While securing these noteworthy changes, Lipetsk farmers still must work a great deal, responsibly and most important--skilfully, in the grain fields for the sake of high end results. [Excerpt] [Krasnodar SEL'SKIYE ZORI in Russian No 5, May 84 p 26] [COPYRIGHT: "Sel'skaya zori", 1984] 8228

CORN CULTIVATION--Voronezh, 28 Jun--Oblast farmers are putting all reserves of the agro-industrial complex to use. At the present time considerable attention is being given to cultivating corn. The corn farmers of Kantemirovskiy Rayon are actively carrying out operations to cultivate ears. In the Luch Oktyabrya and imeni Karl Marx kolkhozes and the Pisarevskiy Sovkhoz as well as others machine operators have completed the thinning of summer crops. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 29 Jun 84 p 1] 8228

PEAS HARVESTING--Voronezh, 12 Jul--The oblast's enterprises have begun the mass harvesting of peas. Through the efforts of complexes and detachments they have been harvested on over 120,000 hectares. Work is being carried out without delay by the kolkhozes and sovkhozes of Bogucharskiy, Borisoglebskiy, Talovskiy, Petropavlovskiy, Kalacheyevskiy and Vorob'yevskiy rayons. After harvesting swathes are threshed and the straw is shipped to farms. Sweeps and stubble plows follow and the fields are readied for the sowing of winter crops. Simultaneously with the harvesting of peas farmers harvest winter wheat, primarily on fallow land. [By A. Kat'kalov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 13 Jul 84 p 1] 8228

MASS SOWING BEGINS--Penza, 16 Jul--Kolkhozes and sovkhozes have begun mass harvesting operations. Peas are being cut in all regions. Winter rye has

matured in southern enterprises. With each passing day more and more combines are being included in the threshing of grain. Over 800 harvesting-transport complexes were created for the harvest period in the oblast. As last year, city residents having a machinist specialty have come to the aid of farmers. On many fields the grain is short this year. In order to avoid losses harvest units have been readjusted for low mowing and they have also been sealed.

[By A. Andreyev] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 17 Jul 84 p 1] 8228

BRIGADE CONTRACT METHOD USED--Kursk, 16 Jul (TASS)--The harvest period has begun for Kursk grain farmers. Today all enterprises in the oblast have begun the mass harvesting of grains, which are located on 1 million hectares. Over 500 harvesting-transport complexes have moved out into the fields. The distinctive characteristic of harvesting operations is the extensive introduction of brigade contracts--half of the machine operators in the oblast are working according to this method. Following tradition, prior to the harvesting period there were meetings everywhere for young machine operators and harvest leaders of past years. They shared their rich experience of grain harvesting. They also noted the work tactics that would facilitate the completion of harvesting in the shortest time possible. Combine operator V. Pastukhov of the Progress Kolkhoz, Timskiy Rayon, who is well-known in the oblast and who last year unloaded over 10,000 quintals of grain from the bunker of his Kolos, told the TASS correspondent: "We begin harvesting using the two-stage method. All reapers are adjusted for cutting low. Machine operators have studied well the routes their units will travel. On each field there will be mandatory control threshing--this provides discipline and forces us to work without flaws and with good quality. We intend to harvest grains in 12 work days." [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 17 Jul 84 p 1] 8228

FIELD SURVEYS--Alma-Ata, 2 [Jul], (TASS)--The grain farmers of Alma-Ata Oblast have taken their combines along the routes recommended by scientists. With the help of electrical equipment capable of evaluating the condition of grain crops from the air, scientists-hydrometeorologists evaluated grain crops between the Urals and the Altay in 20 hours. They made up maps on productivity and the order for harvesting grain crops. Computers provided recommendations on the amount of essential equipment and the best harvesting schedule. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 3 Jul 84 p 1] 8228

MASS GRAIN HARVESTING--Alma-Ata Oblast--The sovkhoses of Dzhambul'skiy Rayon have begun the mass harvesting of grains. Here grains matured simultaneously on thousands of hectares. This is why all harvesting units have been brought into the fields. In order to curtail the threshing time of grain enterprises are widely using the large-group method of harvesting. The shipment of grain from the field to the threshing floor is carried out using combined trailer and batch methods. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 11 Jul 84 p 1] 8228

SPIKE HARVEST BEGINS--Taldy-Kurgan, 26 [Jul] (By telephone)--Oblast farmers have begun the mass harvesting of spike crops. Machine operators have focused all of their attention on eliminating grain losses. Combines and truck bodies have been carefully sealed. In order to curtail the threshing time enterprises are widely utilizing the large-group method of harvesting. The transport of grain from the field to the threshing floor is carried out using combined trailer and batch methods. Technical services for machines have been well-organized everywhere, field machines have been prepared and the necessary cultural-personal conditions for machine operators have been created. Grain-reception enterprises have demonstrated a timely concern for the preparation of storage and weighing facilities. [By V. Shingarev] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 27 Jul 84 p 1] 8228

COLLECTIVE HARVESTING--Chimkent--The use of the collective method enables the grain farmers of southern Kazakhstan to carry out the harvest of spike crops at a rapid pace. By midday the thermometer often goes up to 45 degrees. But even in this type of heat machine operators continue their work. The main thing is to preserve the grain. Grain farmers in the southern oblasts of the republic, where the harvesting of winter spike crops is in full swing, are working intensively and precisely. [Text] [Moscow TRUD in Russian 10 Jul 84 p 1] 8228

MASSIVE GRAIN HARVESTING BEGINS--Taldy-Kurgan Oblast--The farmers of Taldy-Kurgan Oblast have begun the mass harvesting of grains. Joining the work are 2,300 combines. All of them have been carefully sealed. Other channels for grain losses have also been dependably covered. In the oblast's enterprises it has become a rule to carry out a species determination of productivity and control threshing on every plot with crops prior to the beginning of harvesting operations. "This year," said the senior agronomist of the oblast agricultural administration, V. I. Prizhebil'skiy, "spike crops excluding corn and rice occupy 466,000 hectares here. On dry-farming lands in the steppe zone grains suffered in part from drought, and machine operators were forced to carry out harvesting operations at a low speed and to cut as low as possible. In the mountain and foothill zones grains are still green and yields should be satisfactory. A large harvest of winter wheat is expected on irrigated plowland." Harvesting is just increasing its pace, but farmers of enterprises are already concerned about the future harvest. The plowing of fall fields has begun, fallow is being cultivated and seed is being prepared for winter sowing. [By L. Ivanov, department director of the oblast newspaper ZARYA KOMMUNIZMA] [Excerpts] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 17 Jul 84 p 1] 8228

GOAL OF GOOD HARVEST--Harvesting operations have begun on the fields of Semirech'ye. In defiance of complex weather conditions the workers of Taldy-Kurgan Oblast are striving to complete the harvest in the optimal period and without losses, to increase the size of the herd and the productivity of livestock and to strengthen their contribution to the implementation of the Food Program. It is especially important for the oblast not to lose its earned reputation as one of the leading corn and rice farming areas in the republic and to eliminate the lags that have been tolerated in the production of sugar beets. [Excerpts] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 17 Jul 84 p 1] 8228

CSO: 1824/592

POST HARVEST CROP PROCESSING

KAZAKH LABOR COLLABORATION FOR INCREASED GRAIN PRODUCTION

Moscow TRUD in Russian 2 Aug 84 p 1

/Article by V. Tarasenko, chairman of the Turgay Oblast council of trade unions: "The Harvest United the Partners"; for similar information see JPRS 1824/598, dated 9 August/

/Text/ According to data supplied by the USSR Ministry of Agriculture, by 30 July cereal grain crops had been cut down on an area of 34.7 million hectares throughout the country and threshing work completed on an area of 26.6 million hectares. The farms in Stavropol Kray, the Kuban region and in Donetsk, Voroshilovgrad, the Crimean, Kherson, Dnepropetrovsk and Kharkov oblasts have completed their grain harvest operations.

The busy harvest season is drawing to a climax. The harvesting of grain crops is being carried out on farms in all of the union republics, in 50 oblasts, krays and autonomous republics of the Russian Federation, in all oblasts of the Ukraine and in 10 oblasts of Kazakhstan. In this latter republic, the grain operations are moving further to the north.

Quite often, one sees the following picture: the busy harvest season has barely commenced and the allied workers waste time clarifying relationships. The sovkhoses, motor transport enterprises, railroad workers, procurement organizations and road transport workers exchange complaints with one another. This occurs despite the fact that they all have the same goal -- to harvest and preserve all of the products grown.

The collectives at the Sovkhoz imeni Leninskiy Komsomol, the Zhanadalinskiy Motor Transport Enterprise, an elevator, rayavtodor and the Tasty-Talda Station have resolved to reject mutual reproaches in favor of labor collaboration and, as a result, they concluded an agreement for a socialist competition and have undertaken raised obligations.

In carrying out the conditions of this agreement, the Sovkhoz imeni Leninskiy Komsomol, prior to 1 August, completed its repair work on combines, restored order to their field roads, weighing economy and loading and unloading equipment on the threshing floors and it built a storage bin for the grain. The

professional trade union committee organized a mutual check upon the readiness of the harvest equipment and the field camps.

The mutual check carried out on the competing allied workers revealed that the collective of the motor transport enterprise, prior to the commencement of the harvest campaign, had achieved a high technical condition for its motor vehicles and trailers and coordinated the hourly schedules for grain deliveries with the elevator.

The collective at the elevator had prepared its entire logistical base for accepting grain 15 days earlier than the schedule called for. The acceptance, drying and cleaning of the grain will be carried out around-the-clock. The mobile laboratories for carrying out a preliminary evaluation on the quality of the strong and durum wheat varieties have been supplied with all of the necessary equipment.

For their part, the railroad workers have vowed to reduce the idle time of the freight cars, deliver them for loading only in correct operating condition and when necessary -- to carry out partial repairs.

This initiative, approved by the oblast council for professional trade unions, has found support in Yesilskiy, Zhaksynskiy and Derzhavinskiy rayons.

The trade union committees are organizing regular mutual checks upon the fulfillment of the obligations undertaken in connection with the inter-branch socialist competition and they are publicizing the labor rivalry. In addition, they are exercising control over the cultural and domestic conditions being provided for those participating in the harvest campaign. Thus the field camps are already fully prepared for receiving the workers. Each one has its own dining hall, recreation room, bath or shower.

The farmers in Turgay Oblast and the machine operators from the Ukraine, Uzbekistan and Alma-Ata Oblast who have come to provide them assistance are prepared to do everything possible to ensure that the jubilee year of the virgin lands is celebrated in the form of full granaries.

7026

CSO: 1824/624

POST HARVEST CROP PROCESSING

CONCERN OF GRAIN GROWERS FOR EFFICIENT TRANSPORT SERVICES EXPRESSED

Minsk SEL'SKAYA ZHIZN' in Russian 27 Jul 84 p 1

[Article by Ye. Napriyenko, director of the Obrastsevy Sovkhoz: "Using One's Own Transport"; with commentary by A.G. Braun, chairman of the council for the oblast agroindustrial association; for similar information see JPRS 1824/598, dated 9 August/

/Text/ The virgin land workers of Kazakhstan are making preparations for the harvest season. Only a short period of time remains before they move out onto the fields and yet a considerable amount of work still remains to be carried out. One of the primary concerns of the grain growers -- efficient transport services for all elements of the harvest production line.

During the period devoted to the mass harvesting of grain crops, there is as a rule a shortage of motor vehicles, despite the fact that each autumn thousands of motor vehicles are sent to the virgin lands from cities. In 1978, for example, our sovkhos was allocated 100 motor vehicles. For each combine there were two trucks -- it was a good arrangement. Nevertheless, combines with full hoppers had to stand and wait to be unloaded.

This paradoxical fact convinced us that reliance upon the use of borrowed transport equipment was not a sound proposition. With rare exception, motor vehicles which were made available on a temporary basis were not equipped for the transporting of grain, their cargo carrying capacity is low and their technical condition less than good. Considerable complications arise owing to the variety of machines involved: a farm has to acquire several unloading lines. And is it an easy matter to control in an efficient manner hundreds of motor vehicles which belong to a dozen departments and are subordinate to sovkhos management for only a short period? Nor do I have in mind the fact that a farm is not always capable of organizing efficient technical services for hundreds of motor vehicles or of displaying concern for the nutrition and daily routine of their operators.

For the past 3 years we have not been bothered by these concerns. Today the sovkhos no longer has to borrow as much as one motor vehicle, but rather it uses its own resources. This was achieved owing to use of Kirovets machines for transporting the grain -- beyond doubt the best type of technological transport for the rural areas.

Each of the three harvesting-transport complexes at our sovkhos have 2-3 K-700's with a single chain of wagons. After having built up the sides of the trailers, the machine operators began hauling 20-23 tons of grain per trip. The average distance from the field to the threshing floor for us is 12 kilometers. During a day's time, a tractor train can make a minimum of five trips and thus ensure continuous operations for 6-7 grain combines. We have the potential for equipping each tractor with a pair of interchangeable trailers, thus further increasing the effective workloads for the Kirovets machines. However, even given the manner in which their operations are organized at the present time, the use of tractor trains is considerably more economic and convenient than the use of motor vehicles. During the last harvest season, the brigade of A.V. Misyurin included 18 combines. They threshed more than 10,000 tons of grain, after which the grain was loaded into interchangeable tractor trailers. The delivery of this grain to the threshing floor was carried out by three tractor operators -- M.I. Kochnev, V.M. Misyurin and A.P. Shikanov. And it should be noted that the brigade harvested its crop in just 21 working days -- more rapidly than ever before.

For comparison, allow me to cite the following figures: in the case of a large number of motor vehicle enterprises, the seasonal transport volume for grain amounted to only 300-400 tons per motor vehicle. As a point of interest, our economists compared motor vehicle and tractor transport in terms of the transport production costs. It turned out that the use of motor vehicles, even when such use was organized in a highly efficient manner, cost the sovkhos twice as much as when use was made of tractors. Importance is attached to the fact that the wages which were paid earlier to temporary duty drivers are being maintained at the sovkhos. Today, with all of the brigades converting over to the collective contract method, our machine operators are especially interested in this fact.

Having become convinced regarding the advantages of having one's own transport, we decided to proceed further. If we are provided with three new chains of wagons for use with the K-700 machines for harvest purposes, with the sovkhos bearing the expense, then we will transport the grain to the grain receiving enterprise. The preparations for this began as early as last year. In the morning, while the combines were still idle, the tractors would carry out a trip to the elevator. Having reinforced this detachment with three new tractor trains, we were able to transport no less than 300 tons of grain daily to the state granary and to perform this work with no assistance being provided by the motor transport workers.

Certainly, a suitable loading and weighing economy was required in order to send such a large transport unit up to the readiness line. In loading the Kirovets machines from clamps using conventional conveyer line grain loaders, the tractor trains will stand in line for longer periods of time than they will be engaged in carrying out trips. Thus we installed 150-ton bins at two threshing floors where clean grain accumulates during a day's time. The loading of the tractor trailers from such bins required only a brief amount of time. Nor are any problems being encountered at the present time in connection with loading them at the sovkhos's grain threshing floor. Thus it can be said that "complete transport self-service operations" is a fully realistic goal.

by Ye. Napriyenko, director
of the Obraztsovyy Sovkhos

Commentary by A.G. Braun, chairman of the council for the oblast agroindustrial association.

It is an envious desire on the part of each farm to be able to use its own transport equipment for moving grain from a combine to the elevator, as is being planned for the Obratzsovy Sovkhoz. But each farm is by no means capable of doing so. Today the task at the oblast level is somewhat more simple: to handle the transporting of crops without having to employ motor transport equipment brought in to the oblast from other areas.

This is also rather difficult work. It is sufficient to state that in past years we used from 4,000 to 12,000 motor vehicles brought in from outside the oblast. And nobody was of the opinion that this was excessive. This year the situation on our fields is still favorable and hence it is expected that the volume of grain shipments will be great. When these circumstances are taken into account, it appears that we must double the productivity of the oblast's transport pool being used for harvesting the crops.

Never before in the past have we undertaken such a goal. Moreover, the preparation of the transport equipment for the coming harvest season has never been started as early as it has this year.

First of all, the plans call for mobilizing literally all of the means at our disposal for transporting the crops. In particular, Kirovets machines are being employed extensively for moving the grain from the combines. Last year the oblast's farms used 860 trailers in their tractor trains. At the present time, 2,000 of them have been prepared for operations and by the start of the harvest operations no less than 3,200 will be ready. Last autumn, 75 brigades shipped grain from combines using only tractors. This year 230 tractor-field production brigades out of 648 decided to convert over to this effective method for providing transport service.

It is also obvious that there is an ample amount of motor transport work. Thus more attention must be given at the present time to raising the carrying capacities of the motor vehicles. Especially those that will be used for transporting the grain to the elevators. As is well known, drivers S. Balyan, P. Kolos and V. Shcherbakov at the Tselinograd Freight Motor Vehicle Administration initiated the movement to place in operation heavy-freight, 100-ton motor vehicle trains. During the course of a season, they supplied the receiving enterprises with 10,000 or more tons of grain. In preparing for the new harvest season, Hero of Socialist Labor V. Shcherbakov concluded an agreement with the board of the Armavirskiy Sovkhoz for transporting all of the sovkhoz's grain to the elevator. This innovator has many followers -- this autumn the drivers of the motor vehicle administration will move 485 motor vehicle trains of a raised carrying capacity out onto the routes.

An equally important reserve is that of sharply reducing the periods of non-productive idle time and runs by motor transport. From an organizational standpoint the task is being solved through the use of progressive methods for providing transport services for combine teams and through centralized control over grain procurements according to hourly schedules. Here we have also accumulated instructive experience, which should now be mastered on a more

extensive basis. Here we have in mind, for example, the extensive use of interchangeable trailers based upon the multiple-trailer and portion methods. This increases by almost twofold the output of the motor vehicles. The oblast's motor vehicle administration is organizing 240 driver brigades which will use these methods in carrying out their work. The plans also call for such brigades to be staffed using drivers from kolkhozes, sovkhoses, Sel'khoztekhnika and Sel'khozkhimiya.

This work is being strengthened from a technical standpoint through the reorganization of the weighing and loading-unloading economy. There is a considerable amount of work here. Within a brief period of time, 315 grain threshing floors must be reequipped for large-freight transport vehicles and 308 highly productive tractor loaders and 42 dumpers for unloading trucks and trailers must be prepared for operations. This work is presently being carried out at a maximum tempo. For example, three fourths of the planned number of tractor loaders have already been prepared.

In order to avoid combine idle time on farms throughout the oblast, the decision has been made to produce 700 grain storage tank-reloaders with a capacity of from 10,000 to 15,000 tons. In early June we gathered together the agricultural engineers in Yermontauskiy Rayon, where they were shown models of these storage tanks, mounted on tractor wagons, seed loaders and also grain combines which had been written off. For the purpose of accelerating the loading of motor vehicle trains destined to call at elevators, 200 stationary storage tanks for holding 50-100 tons each will be installed on the grain threshing floors. These tanks will be similar to those which proved their worth at the Obratzovyy Sovkhoz and at a number of other farms throughout the oblast.

The engineers of the oblast's agricultural administration transferred these and other recommendations by the rural efficiency experts to paper and they issued drawings to the engineers of farms and to the sovkhoses and kolkhozes. In addition, the metal and construction materials required for carrying out this work were made available.

It is expected that all of the planned work will be carried out on schedule. The harvest work will not be held up because of a shortage of transport vehicles.

7026
CSO: 1824/624

LIVESTOCK FEED PROCUREMENT

USSR, RSFSR FEED PROCUREMENT PROGRESS REVIEWED

Progress, Problems in Feed Procurement

Moscow TRUD in Russian 14 Jul 84 p 1

[Article by A. T. Gulenko, USSR deputy agricultural minister: "About Feed as About Grain"]

[Text] As we have already reported, the regular meeting of the Politburo of the CPSU Central Committee heard information on the course of feed procurement. Emphasized was the necessity to organize matters in such a way as to be sure that in each enterprise livestock raising is unconditionally supplied with a sufficient quantity of coarse and succulent feeds. Upon request by a TASS correspondent, A. T. Gulenko, USSR Deputy Agricultural Minister, discusses the special features of the current green harvest in the country's kolkhozes and sovkhozes.

[By Gulenko] The USSR Ministry of Agriculture and its primary organs are taking measures to organize the hay harvest more precisely. There are many examples which show that it is possible to stockpile feed quickly and with good quality under any sort of weather conditions. For example, work is organized well in the enterprises of the Baltic republics. In Lithuania the first mowing of grasses was completed successfully and the plan for the stockpiling of haylage was completed.

Many enterprises in the Ukraine, Belorussia, Moscow, Leningrad and Gorkiy oblasts and a number of other regions are stockpiling feed reserves with assurance.

A complex of measures is facilitating success here. This includes the use of equipment in two shifts and skilfull maneuvering of this equipment. In particular, depending on weather conditions agricultural machinery is sent to procure hay or haylage. In many sovkhozes and kolkhozes progressive methods of procurement are being utilized well--this includes methods such as pressing hay and drying it with the aid of active ventilation.

Shock month campaigns for feed procurement for public livestock raising help to accelerate the pace of harvesting. In this considerable attention is directed at the organization of hay mowing and at so-called unproductive land.

Unfortunately, existing resources and possibilities are not being utilized effectively everywhere. Hay-mowing operations are proceeding unsatisfactorily in Armenia, Georgia, the Kirghiz SSR, Uzbekistan, Yaroslavl and Novgorod oblasts and several other regions of the country.

It is important to complete the first mowing of grasses in the shortest possible time and without delay to implement a complex of agrotechnical measures with the goal of obtaining full-weight second and subsequent harvests.

We have been alerted to the fact that in a number of regions of the country the preparation of silage-harvesting combines is proceeding slowly. Sometimes this occurs as a result of the failure to deliver accessory and spare parts for the machines.

Feed Procurement Overview in RSFSR

Moscow SOVETSKAYA ROSSIYA in Russian 19 Jul 84 p 1

[Commentary by N. S. Kraynev, deputy director of the Main Production Association for the Central Region of the RSFSR Ministry of Agriculture: "Hurry, Choppers"]

[Text] In our region the weather remains unstable. At one moment dry grasses are suddenly subject to rainfall, at another it gets very warm and the sky remains clear for a long time. Under these conditions special significance is acquired by precise and skilful maneuvering of people and technology. In leading enterprises workers have learned how to efficiently make the transition from the procurement of one feed to another. During the heat hay and haylage are procured; during bad weather equipment is redirected to silage trenches. With the first cutting almost 70 percent of the area in grass was mowed, and in the Moscow region this figure reached over 85 percent.

Ryazan and Kaluga oblasts are leading in pace of hay-mowing--here workers act with greater initiative and utilize local possibilities more boldly. In Ryazan Oblast, for example, workers were able to eliminate a shortage of mechanical rakes and hay turners. Enterprises of Sel'khoztekhnika [Agricultural Equipment Association] were recruited for their production and now there are over 1,000 such machines working in the fields.

Unfortunately, we do come across disruptions in the organization of hay mowing. In Tula Oblast grasses have suffered from drought, yet of 15,000 hectares to be irrigated, only 4,000 are being irrigated because of broken equipment.

Smolensk, Kalinin and Kostroma oblasts lag in the harvesting of grasses. Here the necessary controls over the use of equipment have not been organized and some of the machines remain idle due to undependable repair services. The shortage of machine operators is having a negative effect on the pace of harvesting. Considerable reserves still have not been put into operation in oblasts which are carrying out hay-mowing on an, so to speak, intermediate level. Thus, in Ivanov Oblast in the Kolkhoz imeni General Gorbatov of

Palekh Rayon, an original method for drying hay using active ventilation under a panel was used for the first time in the Central Region. This method is accessible to all but is being introduced poorly.

This year good managers are paying special attention to feed quality. In particular, in the oblasts of the Central Region the Mikhaylovsk Method, which is earmarked for unstable weather conditions, is being utilized more and more. Cut green mass is dried to 25-30 percent moisture content, crushed and placed in trenches. A maximal quantity of nutritive substances is retained in such feed. In Bryansk Oblast, where workers are trying to take into account the criticisms that were expressed at the board meetings of the RSFSR Ministry of Agriculture, preserved hay is now being actively stockpiled. In the Leninskiy Put' Kolkhoz, for example, 1,500 tons of this nutritive feed have already been placed in storage.

In the Central Region the mass harvesting of grains will begin soon, and this means that there will be significantly less equipment and fewer forces remaining for feed procurement. This is why today we must force the mowing of grasses in every way possible.

8228

CSO: 1824/594

LIVESTOCK FEED PROCUREMENT

PROGRESS OF KAZAKH FEED CROP HARVESTING

Weekly Feed Review: 2 July 1984

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 4 Jul 84 p 1

[Article: "A Month's Campaign on Feed Procurement Is in Progress"]

[Text] The following has been procured in the republic as of 2 July of this year: hay--3,409,400 tons or 21 percent of the plan, haylage--1,219,100 tons or 39 percent of the plan and vitaminous grass meal and other dehydrated feeds--48,600 tons or 16 percent of the plan.

This includes the following, procured during the first week of the month's campaign: hay--1,490,900 tons or 105 percent of the goal, haylage--251,800 tons or 149 percent of the goal and vitaminous feeds--16,900 tons or 93 percent of the goal.

The goals related to hay procurement during the first week of the month's campaign were overfulfilled by North Kazakhstan, Kokchetav, Semipalatinsk, Turgay, Kustanay, Tselinograd, Dzhezkazgan, Dzhambul and Aktyubinsk oblasts.

Weekly goals were not met by East Kazakhstan, Alma-Ata, Kzyl-Orda, Taldy-Kurgan, Uralsk and other oblasts.

Chimkent and Dzhambul oblasts fully completed plans for the procurement of haylage in the best possible time.

Weekly Feed Review: 9 July 1984

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 11 Jul 84 p 1

[Article: "A Month's Campaign on Feed Procurement Is in Progress"]

[Text] The following has been procured in the republic as of 9 July of this year: hay--5,261,300 tons or 32 percent of the plan, haylage--1,477,400 tons or 47 percent of the plan and vitaminous grass meal and other dehydrated feeds--71,400 tons or 23 percent of the plan.

This includes the following, procured during the second week of the month's campaign: hay--1,851,900 tons or 104 percent of the goal, haylage--258,300 tons or 121 percent of the goal and vitaminous feeds--22,800 tons or 96 percent of the goal. The pace for amassing feeds was significantly higher during the second week than during the first.

The goals for the first week of the month's campaign for hay procurement were overfulfilled by the majority of oblasts in the republic; this includes the feed procurers of North Kazakhstan, who overfulfilled these goals by a factor of 1.5. Machine operators provided good indicators in East Kazakhstan, Kokchetav, Dzhambul, Semipalatinsk and other oblasts.

The weekly goal for collecting hay was not achieved by the feed procurers of Alma-Ata, Uralsk, Tselinograd, Guryev and some other oblasts.

Weekly Feed Review: 16 July 1984

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 18 Jul 84 p 1

[Article: "A Month's Campaign on Feed Procurement Is in Progress"]

[Text] As of 16 July the following was procured in the republic: hay--6,999,600 tons or 43 percent of the plan, haylage--1,675,700 tons or 53 percent of the plan and vitaminous feeds--93,700 tons or 31 percent of the plan.

During the past week the following has been procured: hay--1,738,300 tons or 83 percent of the goal, haylage--198,300 tons or 76 percent of the goal and vitaminous feeds--22,300 tons or 77 percent of the goal.

Third-week goals for the amassing of hay have been overfulfilled by East Kazakhstan, Semipalatinsk, North Kazakhstan and Mangyshlak oblasts. The enterprises of East Kazakhstan also overfulfilled goals for amassing haylage and vitaminous feeds.

Lagging behind are Turgay, Karaganda and Guryev oblasts.

Weekly Feed Review: 23 July 1984

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 25 Jul 84 p 1

[Article: "A Month's Campaign on Feed Procurement Is in Progress"]

[Text] As of 23 July the following was procured in the republic: hay--8,623,000 tons or 53 percent of the annual plan, haylage--1,909,000 tons or 61 percent of the plan and vitaminous feeds--115,000 tons or 38 percent of the plan.

During the past week the following has been procured: hay--1,623,400 tons or 84 percent of the goal, haylage--233,500 tons or 79 percent of the goal and vitaminous feeds--21,400 tons or 73 percent of the goal.

Between 25 June and 23 July the total procured has been as follows: hay--6,704,500 tons or 93 percent of the goal, haylage--941,900 tons or 100 percent of the goal and vitaminous feeds--83,400 tons or 83 percent of the goal.

The following have fulfilled goals for the final past week with regard to hay procurement: East Kazakhstan, Semipalatinsk, Taldy-Kurgan, Kzyl-Orda, Mangyshlak and Pavlodar oblasts.

The annual plan for the procurement of haylage has been fulfilled by Chimkent, Dzhambul, East Kazakhstan and Karaganda oblasts.

As previously, Alma-Ata Oblast is lagging behind in hay procurement; its pace has slowed in Kokchetav and Tselinograd oblasts.

Feed Procurement Overview

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 12 Jul 84 p 2

[Article: "The Pace of Feed Procurement Is Faster/ Agricultural Overview"]

[Text] Great and responsible tasks stand before the republic's feed procurers. They must store 15.7 million tons of feed units of coarse and succulent feeds for the coming overwintering period.

As reported by the Kazakh SSR TsSU [Central Statistical Administration], as of 9 July in kolkhozes and sovkhoses seeded and natural grasses have been mowed for the first time on 12.8 million hectares, which comprises 41 percent of the total area. Plans for hay procurement have been fulfilled by 32 percent, for haylage--by 47 percent and for vitaminous grass meal--by 23 percent.

Hay harvesting is being conducted significantly faster by the enterprises of Karaganda, Chimkent, Tselinograd, Dzhambul and Kokchetav oblasts. Plans for accumulating hay have already been fulfilled by 46-51 percent. The sovkhoses and kolkhozes of Karaganda, Taldy-Kurgan, East Kazakhstan and Aktyubinsk oblasts are carrying out the procurement of haylage in an organized manner, and in Chimkent and Dzhambul oblasts plans for its procurement have already been fulfilled by 128 and 111 percent respectively. In the enterprises of Kustanay, Chimkent and East Kazakhstan oblasts the production of vitaminous grass meal has been organized better than elsewhere. Kustanay farmers have already produced 61 percent of the planned haylage.

At the same time in a number of places there are delays in feed procurement. In the enterprises of Guryev, East Kazakhstan, Alma-Ata, Taldy-Kurgan and Aktyubinsk oblasts grasses have been cut on only 17-31 percent of the total area. Grasses are left standing too long in many sovkhoses and kolkhozes of Kzyl-Orda, Uralsk and Semipalatinsk oblasts. Thus we have the slow pace of hay procurement. Aktyubinsk and Alma-Ata oblasts fulfilled plans for stockpiling hay by 23-27 percent, East Kazakhstan, Uralsk and Taldy-Kurgan oblasts--by 20-22 percent and Guryev Oblast--by 13 percent.

In comparison with last year, many rayons and oblasts have decreased the procurement of haylage. The northern oblasts of the republic have tolerated particularly great lags. Here haylage procurement plans have been carried out by only 4-13 percent.

The sovkhozes and kolkhozes of Uralsk, Aktyubinsk, Taldy-Kurgan, Pavlodar and Turgay oblasts do not attach the necessary significance to the production of vitaminous grass meal. Procurement plans for this product have been fulfilled by only 4 percent in Semipalatinsk Oblast, and Kzyl-Orda and Guryev oblasts have not produced a single ton of vitaminous meal.

The Central Committee of the Kazakh CP and the republic's council of ministers have announced, beginning on 25 June of this year, a shock month's campaign to procure feed for livestock raising. Many labor collectives of sovkhozes, kolkhozes and other agricultural enterprises of the agro-industrial complex, under the leadership of party organizations, have strengthened their work on hay-mowing acreage and are doing everything possible to procure the largest volume of feed during the days of July, when steppe and meadow grasses reach full maturity and when hay is felt to be the richest in nutritive substances.

What are the specific results of work during the last 2 weeks of the month's campaign? In the republic as a whole the established goals for accumulating hay have been fulfilled by 104 percent, haylage--by 133 percent and vitaminous grass meal--by 95 percent. The sovkhozes and kolkhozes of Karaganda, Pavlodar, North Kazakhstan, Dzhzhzhkazgan and Turgay oblasts significantly surpassed their goals. The enterprises of Aktyubinsk, Dzhambul, Kokchetav and Semipalatinsk oblasts have met their goals for procuring hay and haylage, Kustanay and Tselinograd--for procuring hay and vitaminous grass meal and Chimkent Oblast--for procuring haylage and grass meal.

Nevertheless, some directors and specialists continue to demonstrate indifference and complacency. The goals for 2 weeks of the month's campaign related to procuring all types of feeds were not met by Alma-Ata and Kzyl-Orda oblasts, for procuring hay--by East Kazakhstan, Guryev and Uralsk oblasts, for procuring haylage--Kustanay and Tselinograd oblasts and for procuring grass meal--Aktyubinsk, East Kazakhstan, Dzhambul, Kokchetav, Semipalatinsk, Taldy-Kurgan and Uralsk oblasts.

At the present time it is important to double and triple the intensity of feed procurement everywhere. It is necessary to organize people's labor better, to increase their sense of responsibility and to achieve a precise cooperation of all links of the harvesting conveyor. Special attention should be given to the operation of technology. In many oblasts and rayons it is used effectively and to full capacity. At the same time some machines remain idle for various reasons in the enterprises of Guryev, Aktyubinsk, Taldy-Kurgan and East Kazakhstan oblasts. In a number of rayons output per hay cutter remains extremely low and not all rakes, collectors-shockers and hay stackers are included in work. In Semipalatinsk and Turgay oblasts units that prepare vitaminous grass meal operate between long periods of idleness.

We must conduct a persistent battle for high productivity of harvesting units and provide incentives for machine operators who can utilize equipment skil-

fully. The extensive application of collective contracts in feed production can increase the interest of workers in feed procurement.

During the "green harvest" great concern must be directed at feed quality. Already today there are cases in which in a number of enterprises of East Kazakhstan Oblast over 70 percent of the tested hay turned out to be non-classifiable. A great deal of poor-quality haylage has been procured in the sovkhoses and kolkhozes of Taldy-Kurgan and Alma-Ata oblasts and of vitaminous grass meal--in North Kazakhstan and Tselinograd oblasts. This situation must be corrected immediately. We must not tolerate a delay in technological operations that result in a loss of quality in grasses which remain for too long in swathes or windrows.

In order to preserve feed better stack ventilation should be utilized, hay pressing should be practiced more and chemical preservatives should be utilized more during ensilage.

The recommendations of scientists and specialists from the republic's ministry of agriculture and the Eastern section of VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin], made with the goal of providing qualified help to enterprises with regard to the procurement of full-value and high-quality feeds, are an important foundation for meeting the goals of the hay-harvesting campaign.

This year's complex weather conditions require the use of all reserves and possibilities for the "green harvest." In addition to seeded and natural haylands, grasses must be completely harvested from poor lands, ravines and gullies and the sides of roads--everywhere where it grows. The procurement of sprig feed should be organized. For these purposes we should widely recruit the inhabitants of rayon centers and cities, students in upper grades, retirees and other volunteers. Partners in agro-industrial associations and the collectives of patron enterprises and organizations should not remain on the side.

While demonstrating concern for the development of a stable feed base it is also necessary to organize the collection of waste products from vegetable farming and the food branches, to take into account the leftover feed of past years and to organize the procurement of straw and chaff from the new harvest. Tireless attention must be directed at preserving all that has been raised and stored and counter-fire measures must be strictly observed.

At the same time we should strengthen work everywhere with regard to the care of intertilled crops, especially corn, feed root crops, sugar beets and alfalfa. In doing this it is important to achieve the efficient utilization of irrigated lands and technology, especially sprinkler systems, and to achieve the effective consumption of water and fertilizer. In the interest of the situation there must be a wider implementation of repeat and interrow plantings of feed crops; we must carry on a struggle for a high return on every hectare of land.

The hay harvest is in full swing. Party, soviet and economic organs and RAPO [Rayon Agricultural Industrial Association] soviets are obliged to take all measures to make sure that the pace of harvesting grasses increases from day to day and that goals are fulfilled and surpassed everywhere. Only under these conditions can the public herd and livestock belonging to private plots be supplied with sufficient quantities of feed.

8228

CSO: 1824/589

LIVESTOCK FEED PROCUREMENT

STRENGTHENING KAZAKH FEED PROCUREMENT POTENTIAL

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 6, Jun 84 pp 2-3

[Article: "About Feeds As About Grain"]

[Text] It is essential to widely begin socialist competition among the labor collectives of sovkhoses and kolkhoses with regard to the fulfillment and overfulfillment of goals to accumulate feeds of a high quality. Special attention must be focused on the utilization of all kinds of material and moral stimulants of workers involved in feed procurement in order to improve the effectiveness and quality of work.

(From a resolution by the Central Committee of the Kazakh CP and the Kazakh SSR Council of Ministers on the organized completion of feed procurement).

During these summer days the most important task of the republic's rural workers is the procurement of feed for the coming overwintering period. How kolkhoses and sovkhoses will deal with it will affect the fulfillment of plans for the development of livestock raising not only during this year but during the final year of the five-year plan as well. Agro-industrial associations now have at their disposal increased possibilities for creating the necessary conditions for raising the productivity of the public herd. And these must be made use of everywhere.

At the ceremonial meeting dedicated to the 30th anniversary of the assimilation of virgin and long-fallow lands the following was emphasized: "The tasks facing the republic's livestock farmers are exceptionally responsible. Already this year it is necessary to sell the state 1.5 million tons of milk, 58,000 tons of wool and over 2 million eggs. In addition, it is essential to make up for debts with regard to the procurement of some types of farm products and to reach production levels foreseen by the assignments for the five-year plan." In connection with this today as never before it is necessary to develop a dependable, guaranteed reserve of all types of feeds.

Party committees, soviet and agricultural organs, primary party organizations and directors and specialists of enterprises are obliged to indicate and

implement the necessary measures for the unconditional solution of the feed problem. The republic's enterprises must procure 19.5 million tons of hay and haylage, almost 25 million tons of silage and large amounts of other feed products. In connection with increasing the herd of livestock the volume of procurement exceeds last year's.

The main source for feed in the republic is natural hay lands, meadows and mowed pastures from which two-thirds of the total volume of feeds are collected each year. This year grasses will be harvested from an area surpassing 30 million hectares. Progressive technology is being introduced for mowing hay, first and foremost including the large-group use of technology--dozens of machines and mechanisms are involved in work, including about 60,000 mowers and over 80,000 tractors. All enterprises have the possibilities for securing the uninterrupted operation of the harvesting conveyor. The large-group method of harvesting grasses is widely employed in the virgin regions with their large expanses of mowing acreage as well as in the semi-desert zone of Mangyshlak, Guryev, Dzhezkazgan and Kzyl-Orda oblasts. It is important to effectively utilize this method, to secure the continuity of operations and to disallow breaks between them.

In accordance with the decisions of the Central Committee of the Kazakh CP and the Kazakh SSR Council of Ministers, significant work has been and is being performed in the republic to strengthen the feed base of livestock raising. During the last 3 years of the five-year plan the procurement of all types of feeds has increased. In this a large role was played by the introduction of a zonal system of farming and by its integral part--crop rotation. Leading enterprises pay a large amount of attention to intensifying field feed production.

But its experience is not being disseminated everywhere. In a number of sovkhoses and kolkhozes the productivity of grasses, silage crops and root crops is low. For example, we know the advantages of irrigated feed production. Irrigated acreage equals only 9 percent, but yields up to one-third of the total procurement of feed. In places where the quality of farming is high, 500-700 quintals of corn green mass, 100-150 quintals of hay and 300-500 quintals of green mass of perennial grasses are harvested per hectare. In irrigated farming multi-mowing technology and catch crops should be introduced more boldly, especially in Chimkent, Alma-Ata, Taldy-Kurgan and Dzhambul oblasts, which would enable us to produce an additional million tons of feed units. We cannot come to terms with the fact that in some places the irrigated hectare is mismanaged--crop rotations are violated, the irrigation regimen is not followed and fertilizers are not utilized effectively, as a result of which high-protein crops supply small harvests. There are cases in some enterprises of Taldy-Kurgan oblasts in which water is discarded during the night and sprinklers operate in one shift.

Perennial grasses--alfalfa, sweetclover and sainfoin--have been allocated 1.5 million hectares in the republic; a large part of this area is irrigated. Of the high-protein annuals special attention has been given in recent years to Sudan grass. Field feed production occupies 10 million hectares, but this area produces haylage, silage, root crops, vitaminous grass meal and grain forage. More oats, barley and pulse crops rich in protein are produced here.

The problem of feed protein is among the most acute. Above all we must increase the production and procurement of high-protein crops that replace grain forage. This includes soybeans. However, the average yield of this crop is still low--a little over 7 quintals per hectare, which speaks of an underestimation of the crop by the directors and specialists of enterprises; crop stands are small and care for them is performed without quality. But it has been proven that if soybeans make up one-fourth of corn silage, milk yield increases by 20 percent and fat content in milk reaches 3.6-3.7 percent. The enterprises of the suburban zone near the capital produce 25-30 quintals of soybeans per hectare, give most of it to the state and produce 10 quintals of mixed fodder per quintal.

Protein-rich alfalfa has finally proven itself well in crop rotations in recent years. In the southern part of the republic in eight-field feed crop rotations with short rotation periods it occupies four fields. Even with a productivity of 80-100 quintals per hectare it meets the needs of enterprises for vitaminous grass meal. In the Aksu Sovkhoz of Dzhalaqashskiy Rayon, Kzyl-Orda Oblast, alfalfa has been successfully included in rice crop rotations for more than 1 year. Moreover, the supplementary wages of rice farmers depend on their fulfillment of tasks related to the procurement of alfalfa--this is stipulated by the agreement. The timely alternation of crops in a crop rotation increases productivity; last year an average of 62 quintals of unhusked rice and 80 quintals of alfalfa were produced per hectare. Alfalfa occupies 800 hectares; prior to the sowing of rice there is sufficient time to irrigate and top-dress it twice.

The same is true everywhere where it has been understood that alfalfa is an unsurpassable feed crop. Feed crop rotations with a dominating share of alfalfa are also being successfully introduced in Alma-Ata and Chimkent oblasts. In the Pakhtaaral'skiy Sovkhoz-Technical School alfalfa fields in crop rotations are harvested five times annually. In other words, the introduction of zonal systems has an immediate effect on the harvest of feed crops.

On over half of the republic's haylands hay is procured according to progressive methods, particularly pressing. Swathes, sun-cured to 20 percent moisture content, are pressed into bales. It is convenient to ship such hay 50-60 kilometers to overwintering locations, or even greater distances if necessary. Pressed hay almost totally preserves all nutritive substances if the procurement schedule is adhered to. Some enterprises utilize roll pressing, with rolls reaching a weight of 500 kilograms, which is also convenient for shipment and storage. Unfortunately, this method is used to procure only 10 percent of pressed hay. Its advantage is the elimination of feed losses.

Active ventilation is becoming more and more widespread. This involves bringing the mowed mass to a 40-percent moisture content and then transporting to the location for stacking in hay straddle canals of UVS-10 or UDC-30 ventilators. This was organized satisfactorily in North Kazakhstan Oblast, where it is planned to procure 130,000 tons of hay using this method, whereas in Aktyubinsk Oblast it will be used to procure 2,000 tons, in East Kazakhstan--5,000 and in Taldy-Kurgan Oblast--7,000 tons. The enterprises of Semipalatinsk, Uralsk and Pavlodar oblasts are participating poorly in active ventilation although

it is well-known that this method enables us to obtain a 15-20 percent greater biological harvest. In addition, protein is almost totally preserved in feeds and there is 4-5 times more protein than in the usual method of hay procurement. Active ventilation must also be more widely utilized for drying the crushed mass of legumes, bringing them to a moisture content of 18-20 percent.

On over 10 million hectares hay is procured according to old methods--it is mowed, raked into hayricks, moved and stacked. In this case the losses of nutritive substances often reach 50 percent. The reasons for this include drying out in swathes and losses during shipment. A prolongation of the period for harvesting grasses is intolerable and for this reason the directors and specialists of enterprises must hasten the pace and curtail the schedule in every way possible.

There are great tasks before feed procurers in the development of reserves of silage, vitaminous grass meal and granules. Plans for their procurement have also been increased. For example, 305,000 tons of vitaminous grass meal should be produced. The Alma-Ata Sovkhoz of Alma-Ata Oblast has been producing this for several years. The shop operates in three shifts, twin units are utilized and up to 10 tons of flour are sent to storehouses per day. It is used to prepare granules, which are submitted to the state and mixed fodder is received in return. In the Ural Kolkhoz of Burlinskiy Rayon, Uralsk Oblast, the shop for producing green granules provides assistance to the kolkhoz. During the last overwintering period a great deal of forage was economized on because feed mixtures, consisting of green granules, straw, concentrated feeds and macro- and micro-elements, were utilized.

It is essential to organize everywhere the work of shops to produce vitaminous grass meal and green granules in two shifts. The more enterprises submit this product to the state, the more mixed fodder they will receive. The sovkhoses and kolkhoses of the republic's Minsel'khoz [Ministry of Agriculture] alone must produce 39,530 tons of vitaminous meal for special purposes.

In the coming overwintering period it is important to supply the entire herd of cattle with silage. A large part of it is prepared from corn--96 percent. There is still time before harvesting and in order to obtain maximal production it is necessary to carry out 3-4 interrow treatments and chemical weeding in the course of the summer and to improve the irrigation regimen. Similar work should be done on plantations of beets that are earmarked for feed and on plantations of other root crops. There is a great shortcoming in the procurement of silage--the loss of products due to the shortage of capacities for ensilaging. The republic's enterprises are poorly equipped with lined trenches. Thus, in Uralsk Oblast the plan calls for laying in 1,214,000 tons of silage and haylage, but less than 10 percent of this amount can be placed in existing capacities. This problem must be dealt with persistently with the aid of building organizations and patron enterprises. Everything should be done to fulfill goals on the introduction into operation of silage and haylage structures.

The struggle against losses of feed and their nutritive value remains urgent. It is difficult to calculate how much threshed mass of perennial grasses or

corn is scattered by the wind during harvesting. The bodies of machines and carts are poorly adapted to avoid losses on field roads. It is time to make order so that everything that is grown is fully preserved and so that it retains its nutritive value. Last year of the hay that was checked for quality in the republic only 40 percent was termed first-class and 925,000 tons were placed in the non-classified category. One-fourth of the silage was first class, as was 21 percent of the haylage. But in many enterprises, rayons and oblasts these indicators are lower. We can cite examples in which feed was ruined during procurement and processing. In the Rassvet Sovkhoz of Bishkul'skiy Rayon, North Kazakhstan Oblast, vitaminous grass meal had to be burned last year--they did not find the time to make a laboratory analysis although we know that it is necessary especially at the beginning of procurement in order to deal properly with valuable raw materials.

The experience amassed by workers in Kustanay Oblast is instructive. Earlier they were able to check 30-40 percent of the hay for quality; now the figure has increased to 90 percent. Prior to the beginning of the season a staff of laboratory assistants is selected for points of active analysis on the bases of seed and veterinary laboratories in each rayon. During the period of feed procurement these points are included in the oblast agrochemical laboratory for the determination of quality. Last year about 80 percent of vitaminous grass meal alone was checked; all types of feeds are subject to analysis. Kustanay farmers introduced this service 3 years ago and feed-producing brigades have begun to receive supplementary payments for quality.

The experience of leading enterprises has demonstrated the advantage of individual brigades and complexes that specialize in feed production. The branch has acquired independence and the yields and quality of production have improved. Specialized enterprises achieve an even greater effectiveness. This includes the 60 Let Oktyabrya Sovkhoz of Zhanasemeyskiy Rayon, Semipalatinsk Oblast. Here links have been established for cultivating Sudan grass on the basis of collective contracts. During the last 3 years the harvest stabilized at a level of 300 quintals. The return on a hectare of corn has also increased. Whereas in the oblast average yield is 8 quintals of feed units, in the sovkhoz it is over 40. Here labor productivity exceeds the oblast average by over tenfold in the procurement of silage and haylage. Other indicators are also impressive.

For the second year now feed production in the republic is being conducted under conditions that include the participation of agro-industrial associations. The majority of these have understood their tasks correctly, have eliminated inter-departmental barriers and have subordinated their interests to the single end result. During the procurement period the RAPO [Rayon Agricultural Industrial Association] must mobilize the efforts of labor collectives in the direction of fulfilling daily tasks; it is essential that all partners act in a coordinated manner and that production effectiveness is achieved. The Timiryazev RAPO of North Kazakhstan Oblast has had an interesting experience with the newly-introduced position of engineer technologist, whose function it is to carefully study the material-technical base of enterprises assigned to him ahead of time and to help with making orders of agricultural machinery.

and equipment. As a result technology is distributed among partners with a consideration of need and is supplied in assembled form; spare parts are delivered according to a cyclic schedule.

During this intensive period the RAPO, together with the management of enterprises, correctly distributes cadres, secures the uninterrupted operation of equipment and selects the type of equipment that would secure timely harvesting as well as improved feed quality and an elimination of losses. It is essential to demonstrate more organization and persistence and to strengthen the interest of every subdivision in fulfilling and overfulfilling the plan. This also includes supplying the private sector with feeds. It consists of over 3 million sheep, 2 million cows, about 400,000 horses, almost the same number of hogs, much poultry and many rabbits. The state is demonstrating great concern for the private plots of citizens; 200,000 tons of mixed feeds alone will be sold. Enterprises must supply the population with mowable acreage.

The success of a responsible campaign is achieved in those places where socialist competition was led by party groups, where the results of competition are summarized daily and where ideological-educational work secures the achievement of high end results. More concern should be given to feed procurers--they should be supplied with food and cultural-personal services. In field camps the board of indicators should be filled out in a timely manner, "battle leaflets" and "extras" should be published and they should discuss front-rank workers and criticize flaws in work.

The work of brigades and links on the basis of collective contracts can be called a school of front-rank experience. Organization, conscientiousness, solidarity and discipline provide a high return. The number of such subdivisions is growing. Last year, for example, in the Pavlodar Irtysh area there were almost 300 of them cultivating perennial grasses and corn. The victor in the review-competition, "On the Basis of Collective Contracts--Toward High End Results," was the link of V. N. Pesotskiy of the Pavlodar Sovkhoz-Technical School imeni 50-Letiye SSSR. Instead of the planned 300 quintals of green mass of corn it produced over 400 quintals and is now striving to achieve even greater results.

Brigades and links working according to collective contracts are once again demonstrating their advantages on feed lands.

In the struggle to increase feed resources, the resolution of the Central Committee of the Kazakh CP and the Kazakh SSR Council of Ministers on the organized carrying out of feed procurement serves as a blueprint for action for party committees, local soviets of workers' deputies, economic managers and specialists. Following the example of the workers of Chimkent Oblast the same type of concern should be demonstrated with regard to feed as is demonstrated with regard to grain.

Workers in agriculture and in the republic's entire agro-industrial complex are called upon to multiply their efforts in the widespread competition to implement the decisions of the April 1984 Plenum of the CPSU Central Committee

and the 13th Plenum of the Central Committee of the Kazakh CP. For this reason we must note shock labor every day in the fields and on farms as well as in the procurement of feed.

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CSO: 1824/588

LIVESTOCK FEED PROCUREMENT

SOVIET-HUNGARIAN COLLABORATION ON HOG FEED TECHNOLOGY

Moscow SEL'SKAYA ZHIZN' in Russian 24 Jul 84 p 2

[Article by A. Starkov, deputy director on scientific work of Gipronisel'khoz [All-Union Planning and Scientific Research Institute for the Planning of Standard and Experimental Agricultural Production Centers and Establishments for Storing and Processing of Grain] and candidate of economic sciences, and Ye. Grodskiy, laboratory director and candidate of technical sciences: "Corn in Trenches/Science and Production"]

[Text] Gipronisel'khoz, the head scientific-research and planning institute for the planning of livestock-raising complexes, received a telegram from Rostov Oblast, from the director of the Rogovskiy Sovkhoz. He was reporting on the results of joint Soviet-Hungarian experiments on the procurement, storage and feeding of a new type of feed--ground ears of corn with an increased moisture content. SEL'SKAYA ZHIZN' reported on this in the fall of last year. Now the first results have been obtained. They are hopeful. The daily weight gain of hogs reaches 500 grams and more. Feed preservation is good. This year the oblast plans to procure another 100,000 tons of such feed.

Joint Soviet-Hungarian experiments are continuing. Their final goal is the development of a new type of hog raising complex for the southern part of the country to secure the achievement of high indicators in pork production with smaller expenditures for building and with savings on grain, fuel and electrical energy.

The planning and building of hog raising complexes is preceded by an examination of a method for maintaining suckling sows and weaned piglets in new types of stalls as well as by an examination of test samples of livestock buildings having efficient designs utilizing low energy-consumption systems for heating and ventilation. Still, the most important part of the experiment, its basis, is the experimental examination of a new technological line for the procurement, preparation and storage of ground ears of corn having an increased moisture content. The technology for preserving them was developed in Hungary by the enterprises Agrober and Agromays (Rhodes State Farm).

In the process of conducting the experiment in the Rogovskiy Sovkhoz Soviet and Hungarian specialists made several improvements in technology. In particular, parts for imported combines and special adapters were replaced

by readjusted Soviet SK-5 Niva combines and PPK-4 attachments. A considerable advantage of Soviet harvesting technology was demonstrated--a simpler re-adjustment capability of combines and attachments for harvesting moist ears. Whereas with the original equipment the leaf and stem mass was thrown to the ground and not used as feed for livestock in large part, with the help of Soviet equipment all of it is used for silage.

Corn is harvested during the phase of milky-wax ripeness with a relative humidity of ears of 35-45 percent. During this period a higher (by 12-15 percent) output of nutritive substances per hectare is achieved. The nutritive value of silage from green leaf-stem mass harvested during this time is 25-30 percent greater than that of the mass during the phase of corn grain maturity. The new method of corn harvesting enables us to increase the total yield of nutritive substances from each hectare by no less than 30 percent, thereby decreasing the cost of a feed unit by no less than 30 percent.

By using the new method, enterprises can begin harvesting feed corn 1-3 weeks earlier than grains. As a result, field losses decrease and fields can be prepared earlier and more easily for other, including winter, crops.

The SK-5 combine can be reequipped through the efforts and means of any enterprise. Corn grain and half of the preliminarily-crushed core (the other half is put aside and used for silage together with the leaf-stem mass) are sent to storehouses from the combine bunker by means of trucks. Ground green mass is moved from the PPK-4 attachments to the silo storage by means of trucks.

Ears of corn are preserved in surface blind lined trenches 9 meters wide, 2.5-3 meters high and with a capacity of 500 to 1,000 tons. Trenches are located on dry, raised plots in such a way that the blind wall faces south (to avoid the overheating of ears during the unloading of trenches).

Prior to storage the crushed mixture that has been brought from the fields is unloaded on a working platform into a KZM-50 bunker-feeder and then it is moved to the hammer crusher via an inclined belt conveyor. According to zootechnical requirements corn grain with an increased moisture content that is used as hog feed should be crushed into pieces that are not larger than 2 millimeters (no less than 80 percent of the total mass).

The time needed to store the mass in trenches prior to being covered by a panel is no more than 48 hours. Corn grain and cabbage cores (no more than 50 percent of a hog's ration can consist of cabbage cores) are crushed using the BF-7 hammer crusher, which is capable of processing up to 36 tons of ears in 1 hour.

According to the data of Hungarian specialists that is based on 5 years of tests, each BF-7 crusher can process up to 10,000 tons of grain-stem mixture per season without capital repairs. Last year the Rogovskiy Sovkhoz harvested the fields, stored 1,250 tons of crushed corn ears in two ferroconcrete surface trenches and procured 1,300 tons of green leaf-stem mass for silage earmarked for cattle all in 10 days.

Bulldozers place the crushed mass in storage facilities in layers no greater than 25 centimeters thick (at an angle of 35-40 degrees to the blind wall) and MTZ-80 tractors pack it to the height of the trench (in the center--50 centimeters higher than the walls).

Prior to the storage of crushed corn ears in trenches their walls and part of the bottom (1.5 meters along each wall) are covered with a polyethylene panel that is 0.2 millimeters thick and glued to the walls and the contoured bottom with bitumen. At the seams the panel is fused together with 2-3 tracks by an electric soldering iron.

After the storage of feed in trenches the mass is covered with a panel with overlaps of no less than 2 meters along the longitudinal axis.

As a result of the lactic acid and acetic acid fermentation (without the addition of preservatives) as well as of the physiological "dryness" of the grain, the crushed, packed and panel-covered corn mass is preserved. The loss of dry substance in such feed comprises only 5-7 percent during the period of storage (about 1 year). As compared to drying grain, 30-35 kilograms of fuel are saved per ton.

If technology is adhered to, a light yellow feed with a slight sour bread odor is produced. A kilogram of crushed preserved ears of corn contains about 60 percent dry substance, 0.8-0.88 feed units, 44 grams of raw protein, 24 grams of raw fats, 1.82 percent lactic acid, 0.48 percent acetic acid and 3.8 percent raw gluten.

The proportion of crushed preserved ears of corn in feed rations of hogs comprises 72 percent; the remaining 28 percent consists of protein-vitamin, mineral and other supplements.

The economic effectiveness of the new technology for procuring and storing corn is determined by high-quality feed, its improved preservation, a large output of nutritive substance per hectare of corn, savings of fuel and energy resources and a fivefold decrease in expenditures for the building of storehouses. In terms of dry substance the new feed is not inferior to ground conditioned corn seed as concerns nutritive value, but it costs 30 percent less.

A high level of economic effectiveness of the new technology and a good preservation of feed can be achieved only with a strict adherence to basic conditions. The duration of the entire cycle--from combine harvesting to placement in trenches--should not exceed 2 hours, and the duration of time to fill trenches--2 days. When removing feed each day a vertical layer of packed mixture no less than 20 centimeters deep should be removed along the entire width of the trench. Feed removed from the trench prior to feeding can be stored no more than 2 hours.

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CSO: 1824/581

LIVESTOCK FEED PROCUREMENT

PROBLEMS WITH MIXED FEED INDUSTRY IN ESTONIA

Tallinn SOVETSKAYA ESTONIYA in Russian 8 Aug 84 p 2

[Article by E. Yaggo, chief, Administration of the Mixed Feed Industry of the ESSR Ministry of Procurement: "Behind the Positive Façade"]

[Text] Having significantly overfulfilled its plan for the six months of this year, the ESSR mixed feed industry came close to the limits set for the end of the 11th Five-Year Plan. However, it would be premature to say that processing was running a smooth course. All the more because keeping up the required level of production will be much more difficult inasmuch as the reconstruction of quite a number of old enterprises lies ahead and construction of a new grain products combine in Vil'yandi has barely begun.

Agricultural workers know that the amount of concentrated feeds produced does not, in and of itself, assure that they will be highly effective. For example, the amount of concentrates used to feed cattle was significantly raised for a number of reasons, but this gain only compensates to some degree the shortage of coarse and moist feeds. The tasks of perfecting the formulation and improving the quality of mixed feed, that is, increasing the protein content especially, are closely tied to delivery of raw material. Grain has been the basic component of our mixed feeds up to this point, although it does not constitute more than 18% of a modern formulation. The experience of the past year has demonstrated the effectiveness of soy bean supplement: according to the data of the ESSR agricultural industry organization Agroprom, use of this component has reduced the expense per production unit for concentrated feeds and substantially increased milk yield and weight gain. The Ministry of Procurement, with the support of ESSR Agroprom, is attempting to procure additional supplies of soy beans; most recently it has been difficult to rely on this.

The short supply of warehouses creates complications in the supply of grain components from other republics. If the production capacities of our combines have almost doubled on the average and at some enterprises have increased to four times the previous amount, still, warehouse capacities have virtually remained the same. This causes a standstill of conveyors. Presently our supply of warehouses is only 38%; moreover, the volume of building

planned for the 12th Five-Year Plan will not bridge this gap. And such components of mixed feeds as, for example, powdered milk may not be left in the open for even a short time.

The growth of labor productivity at all of our enterprises that produce mixed feed has been accompanied by an instructive paradox. Although the ESSR Ministry of Procurement cites this growth as 1.4 times the general USSR indicator, genuine progress can scarcely be claimed here. Owing to insufficiency of cadres, clear "discontinuity" occurred at many ESSR enterprises in the case of those who occupied several offices; when their duties were too numerous, they could not cope. Under conditions in which production involved the danger of explosions (caused by meal dust), this is entirely impermissible. For example, at some mixed feed processing facilities, the staff on a shift will be only half present, so that workers literally have to run from one floor to another. Only automation provides an escape from this situation.

The extent to which the industry is outfitted with laboratory apparatus for quality control of raw material and finished production lags behind contemporary demands. For example, the results of toxicity analyses are returned only after ten days, when the raw material involved has been partly used. Determination of protein content by the traditional method takes 6 hours. But at the Tamsalu combine, for example, up to 50 such analyses must be carried out in 24 hours. The laboratories clearly cannot accommodate this volume. Yet there are instruments which can determine all basic parameters of raw materials and mixed feeds, and some farms in the ESSR have already purchased them. Would it not be better to equip the laboratories of mixed feed plants with these instruments rather than farms, all the more because altogether seven types of apparatus are required.

Again returning to the raw material supply, I should note the systematic failure to keep agreements on the amount of feed yeast to be supplied by the "Estonbumprom" combine and the quality of meal from meat conserves supplied by the ESSR Ministry of the Meat and Dairy Industry. At the "Estrybprom" combine, in our opinion, little concern is shown for the quality of special fish meal used in making combined feeds to be used for especially expensive fish such as trout.

As you see, there are a number of unresolved problems behind the positive facade in the system of the ESSR Ministry of Procurement. Here is one. We load our products, as a rule, in a centralized loading system using specialized automated machines. This progressive conveyance method will be established throughout the country. But in this case, how will the population be supplied with mixed feed? Mixed feeds are sold through stores of the ERSPO that are too small to accommodate automatic loaders for heavy loads. As a result, work stops in unloading occur with a frequency that exceeds the norm. Here there are no weights to weigh the mixed feeds and there are no means to adequately accommodate them.

It has been proposed that feed grains be packaged in order that one machine can handle several types. The problem has been discussed at the Ministry of Procurement. A preliminary calculation has shown that for this to occur it would be necessary to build no fewer than five processing facilities for packaging and increase the number of workers in mixed feed enterprises by almost 20%. Such expenses are not justifiable.

Where should the solution be sought? Perhaps there is reason to dispense with the sale of mixed feed through ERSPO stores? Now the population trades in meat and milk directly at the farms, while the same people have to deal with the stores for purchase of mixed grains. Would it not be simpler to offer mixed feed for sale directly from the warehouses of these farms? This would immediately eliminate problems of transportation, weighing, and storage and offer an opportunity for purchase of different types of mixed feed.

The opening of Agroprom has revealed great new possibilities of solving the problems confronting the mixed-feed industry. The new progressive system introduced for material incentives at farms made it easier to purchase high quality grass meal, which had been a "bottleneck" for a number of years. Agreement has been reached on purchase for the Ministry of Procurement of two rapid protein analyzers via Agroprom. The organizations of Agroprom are actively helping to reconstruct a mixed-feed plant at Tamsalu. A plan for long-term development of a technical base for the Ministry of Procurement system is under review. Let us hope that this advantageous cooperation will help us to solve the remaining problems and eliminate "bottlenecks" in the ESSR mixed feed industry.

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CSO: 1824/640

LIVESTOCK FEED PROCUREMENT

BELORUSSIAN FEED PROCUREMENT, SALE REVIEWED

Progress, Problems Noted

Minsk SEL'SKAYA GAZETA in Russian 12 Jul 84 p 1

[Article: "Conducting the Hay Harvest in an Organized Manner"]

[Excerpts] Summary Overview

In the republic an extensive program of feed production intensification has been developed and is being implemented. A satisfactory foundation was laid for fully supplying public livestock raising and the needs of livestock belonging on the private plots of citizens with high-quality forage. The area in legumes, clover and other intensive crops has been expanded. Conditions have been created for the fulfillment of plans dealing with the procurement of hay, haylage, silage and grass meal with the goal of decreasing the use of grain for forage.

The first harvest has almost been completed. Many kolkhozes, sovkhoses and rayons on the whole carried it out in an organized manner and in the best time, fulfilling the plans for the accumulation of feeds.

The kolkhozes and sovkhoses of Maloritskiy, Baranovichskiy, Tolochinskiy, Yel'skiy, Zhlobinskiy, Grodnenskiy, Berestovitskiy, Vileyskiy, Lyubanskiy, Gluskiy and Krichevskiy rayons, where 5.2-6.4 quintals of feed units have already been procured per cow, are proceeding well with the stockpiling of forage.

At the same time, a number of directors and specialists of enterprises are organizing the procurement of feeds without a consideration of the errors and lessons of past years. Many of them used the excuse of wishing to increase mass and of bad weather to begin the hay harvest with delays, thereby allowing some underproduction of feeds starting with the first mowing.

This applies first and foremost to Stolinskiy, Shchuchinskiy and Dyatlovskiy rayons, where fewer than 4 quintals of feed units have been procured per standard head of cattle. Things are no better in Ivanovskiy, Lioznenskiy, Lel'chitskiy, Voronovskiy, Uzdenskiy and Slavgorodskiy rayons.

In many enterprises feed-harvesting equipment is poorly utilized. It operates during one shift, and in some places not throughout all daylight hours; it

Information on the Course of Feed
Procurement in the Kolkhozes and State Farms
as of the BSSR as of 11 July 1984

	O b l a s t s					
	Brest	Vitebsk	Gomel	Grodno	Minsk	Mogilev
Procured (in percent of plan)						
Hay	68.8	93.5	69.2	81.3	78.6	73.3
Haylage	168.5	130.8	160.6	157.4	150.6	117.2
Grass meal	105.8	109.5	104.4	127.0	111.0	127.3
Procured silage mass (in percent of annual plan)	19.0	7.6	5.4	9.5	12.8	3.9
Procured feed units per standard head of cattle--quintals	5.20	6.12	5.66	5.48	6.06	4.90

often remains idle due to various problems. In the harvesting of grasses and the procurement of feed there is an absence of fluidity in the organization of work and of flexibility in maneuvering equipment and people. This is why not a single oblast was able to fulfill quotas for the procurement of hay and dehydrated feeds. All technical means, especially highly productive machines, should be utilized during two shifts and all daylight hours.

Progressive technology in the procurement of feed, especially hay, is not always utilized. Little is prepared using the method of active ventilation. But after all, this method enables us to decrease losses of nutritive substances in feed by up to 20 percent during any type of weather conditions.

Abundant rainfall and the temperature regimen created conditions for the development of a good grass stand for the second mowing. On acreage which was harvested in May-early June grasses have already reached the optimal phase for repeat harvesting. This work should begin without delay.

With a consideration of accumulated experience, we should improve the organization of labor and all links of the feed-procurement conveyor, carry out hay harvesting at a rapid pace and save time. In doing this we should consider that the harvesting of grains will begin soon. This will deflect a large quantity of labor and technical resources, especially transport vehicles. Nevertheless, under any circumstances we must preserve feed procurement detachments and links, develop schedules for them for completing the second mowing and strictly control their fulfillment. Feed procurement does not have to cease; after all, little hay was procured from the first mowing. We must have at least 2 tons of hay per cow.

Sel'khoztekhnika [Agricultural Equipment Association] services must operate with greater precision. The local situation attests to the fact that a large number of feed-harvesting machines remain idle due to the absence of the needed spare parts and to inadequate technical care.

The use of units for vitaminous meal must be improved. This year the production of this type of feed, especially of high quality, is very important. Its use in concentrated feeds will enable us to curtail the use of grain for feed purposes. Drying units are poorly utilized. For example, in Berezovskiy Rayon on the day of the examination 25 percent of them were idle, in Dokshitskiy--30 percent, in Svetlogorskiy--17, in Soligorskiy--32 percent and in Mogilevskiy--50 percent. In many cases they were not transferred to a 24-hour work regimen.

The loading of haylage towers is proceeding unsatisfactorily. In Drogichinskiy Rayon only 40 percent of them have been filled, in Verkhnedvinskiy--25, in Dyatlovskiy--25 and in Borisovskiy and Shklovskiy--20 percent. Measures must be taken and towers must be filled with haylage beginning with the second mowing.

It is important to activate work on feed procurement from non-agricultural acreage. Leaders from industrial enterprises should be more actively recruited for this.

A number of kolkhozes and sovkhoses produce low-quality feed. Hay procurement often proceeds by means of traditional, antiquated methods; haylage procurement--without sufficient drying. Schedules for the filling of trenches and other capacities are not adhered to. As a result, in Brest Oblast only 42 percent of the procured hay was first-class, in Grodno Oblast--43 percent of the haylage and in Gomel Oblast--30 percent of grass meal.

The situation that has developed and the shortage of time call for the decisive elimination of all negative factors in the feed-procurement conveyor and the carrying out of all urgent measures that will achieve the absolute fulfillment of all goals related to feed procurement. Simultaneously with the storage of feed it is essential to carry out other agricultural operations related to feed production. First and foremost, there must be a good organization of work to care for feed crops--corn and root crops. During the harvest period for grains catch crops should be sown on freed acreage. This is why already today it is necessary to demonstrate concern for seed reserves and the necessary quantity of fertilizer.

We must not forget feed supplies for livestock belonging privately to kolkhoz farmers, sovkhos workers and engineering-technical workers.

Problems With Hay Procurement

Minsk SEL'SKAYA GAZETA in Russian 1 Jul 84 p 1

[Article: "No Hesitation in Hay Sales"]

[Text] Summary Overview

As we see from report data, this year the procurement of hay by the state is proceeding extremely unfavorably. As of 12 July of this year only 3,300 tons of hay have been procured in the republic as a whole, or no more than 10 percent of the plan, whereas last year by this time over 89 percent of the planned quantity had been procured.

Complaints about the bad weather by individual directors are unfounded. There are many enterprises and rayons which are fulfilling plans and contractual obligations related to hay procurement for the state. For example, the enterprises of Chervenskiy Rayon are close to fulfilling the plan and contractual agreements on the sale to the state of hay and vitaminous grass meal. The enterprises of Slutskiy, Minskiy, Svetlogorskiy, Oktyabr'skiy, Mogilevskiy, Chauskiy, Goret'skiy and other rayons are also actively selling hay to the state.

Among the oblasts, Gomel, Minsk, Vitebsk and Mogilev oblasts are conducting hay procurement operations most actively; plans for the sale of hay here have been fulfilled by 12-16 percent. Lagging significantly in this indicator are the enterprises of Brest and Grodno oblasts, where the plan for the sale of hay to the state has been fulfilled by only 6.1 and 6.5 percent. In Brest Oblast, moreover, sales of another form of feed--vitaminous grass meal--are proceeding badly. Also, the quality of products sold in Brest Oblast is low.

Oblast	Plan for sale of hay to state (thousands of tons)	Sold as of 12 July 1984 (tons)	Percent of plan fulfilled
Brest	6.5	396	6.1
Vitebsk	6.3	723	11.5
Gomel	5.1	811	15.9
Grodno	3.2	209	6.5
Minsk	4.9	710	14.5
Mogilev	4.0	474	11.9

Rayons such as Dzerzhinskiy, Krupskiy, Buda-Koshelevskiy, Vetkovskiy, Petrikovskiy, Kalinkovichskiy, Checherskiy, Klichevskiy, Shklovskiy, Kostyukovichskiy, Dubrovskiy and Shumilinskiy have not even begun hay sales as of yet.

Significant lags in the fulfillment of contractual agreements regarding hay sales have been tolerated because in a number of places there were lags in hay mowing while better weather was awaited; in other places demandingness was not demonstrated as regards the fulfillment of plans for the sale of hay to the state. But time does not wait. We are on the threshold of the grain harvest, which will deflect a large quantity of labor and technical resources, especially means of transportation. This is why it is essential to take

effective measures in order to sharply increase the pace of procurement of hay and grass meal by the state, completing plans for sales of hay by no later than 25 July of this year and of grass meal--by the beginning of the mass harvesting and procurement of grains.

Overview of Grass Meal Procurement

Minsk SEL'SKAYA GAZETA in Russian 25 Jul 84 p 1

[Article: "Accelerating the Sale of Hay and Grass Meal"]

[Excerpts] Summary Overview by the BSSR Ministry of Procurement

Oblast	Grass meal sold to state, % of plan (as of 23 July 1984)	Including according to classes (in % of that procured)			Hay sold to the state (% of plan)
		I	II	III	
Brest	56.5	10.1	36.8	53.1	50.3
Vitebsk	56.3	12.8	33.2	54.0	48.7
Gomel	80.6	10.5	53.9	35.6	92.7
Grodno	58.5	26.1	44.1	29.8	37.2
Minsk	72.4	16.8	29.0	54.2	65.9
Mogilev	71.1	15.7	36.1	48.2	63.4

This year 11,000 tons more vitamin-supplemented meal must be procured for the mixed feed industry than last year.

Gomel and Minsk oblasts are dealing most successfully with the fulfillment of the plan for the sale of grass meal to the state. Almost half of the enterprises here have already fulfilled it. The enterprises of Mogilev Oblast have significantly corrected the situation concerning the sale of grass meal to the state.

The enterprises of Vitebsk and Brest oblasts are operating below their possibilities in Vitebsk and Brest oblasts. Grodno Oblast is surrendering its position in the fulfillment of the plan for the sale of grass meal. Here there was a drop in the pace of meal procurement, and in recent days the growth in deliveries of products has equalled only 0.8 percent.

Sales plans for grass meal are not being fulfilled by Dubrovenskiy, Chashnikskiy, Ivanovskiy, Berezovskiy, Stolinskiy, Mostovskiy, Voronovskiy, Smorgonskiy, Berestovitskiy, Stolbtsovskiy, Cherikovskiy, Kostyukovichskiy, Krichevskiy and Shklovskiy rayons.

And in general Brest Oblast has not been able to achieve the fulfillment of a plan for the sale of grass meal to the state for several years. This is food for thought for procurement organizations, RAPO [Rayon Agricultural

Industrial Association] and first and foremost the oblast and rayon state procurement inspectorate.

The grass meal that arrives from a number of rayons is of low quality. This refers firstly to the enterprises of Gomel and Brest oblasts, where only 10.5 and 10.1 percent of the meal procured was first class.

The kolkhozes and sovkhoses of Dokshitskiy, Oktyabr'skiy, Braginskiy, Kormyanskiy, Petrikovskiy, Lidskiy, Shchuchinskiy and Cherikovskiy rayons have not sold the state a single ton of first-class grass meal. Up to 6-10 percent of first-class grass meal came from the enterprises of Lakhovichskiy, Drogichinskiy, Luninetskiy, Pinskiy, Stolinskiy, Lioznenskiy, Dubrovenskiy, Chashnikskiy, Sharkovshchinskiy, Vetkovskiy, Zhitkovichskiy, Narovlyanskiy, Krupskiy, Stolbtsovskiy, Dzerzhinskiy, Belynichskiy, Kirovskiy, Klimovichskiy, Khotimskiy, Chausskiy and Shklovskiy rayons.

As the quantity of grass meal procured grows there is a significant deterioration of qualitative indicators. In the course of 25 days of procurement the percent of first-class meal decreased in the republic as a whole from 34 to 15 percent, i.e. by over double. This is an extremely alarming situation. For apart from the delivery of low-quality raw materials for the production of mixed fodder kolkhozes and sovkhoses themselves carry significant losses from the production and sale of grass meal of such a quality.

This year, working according to new GOST standards and improving the quality of grass meal somewhat as compared to 1983, the republic's kolkhozes and sovkhoses will obtain 3.2 million rubles and 4,600 tons of mixed feed more than last year.

In a number of rayons hay procurement to the state has been poorly organized. Significant delays in the fulfillment of contractual agreements on the sale of hay to the state occur because in a number of enterprises and rayons great sluggishness, inertia and decreased demandingness with regard to achieving the fulfillment of the plan for the sale of hay to the state were tolerated.

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CSO: 1824/591

IMPROVEMENT OF HERD REPRODUCTION METHODS DISCUSSED

Moscow ZHIVOTNOVODSTVO in Russian No 7, Jul 84 pp 21-24

[Article by N. Ye. Kozlo, deputy general director of the All-Union Scientific Industrial Association on Reproduction in Animal Husbandry, USSR Ministry of Agriculture: "Constant Attention to Herd Reproduction"]

[Text] The concept of herd reproduction covers an entire series of organizational and veterinary medical methods: the maintenance of females in separate groups and their feeding in line with the dictates of their physiological state and productivity, as well as the gynecological dispensary system and a precise routine of culling out, initial selection, further selection, and correct use of parent pairs, appropriate artificial insemination of animals and the birth, maintenance and proper rearing of the offspring.

To obtain the maximum number of calves, suckling pigs, lambs and foals and keep the litter intact is the main task in the area of reproduction in agriculture.

Biological capacities permit the birth at every farm of 95-100 calves per 100 cows, 2000-2200 piglets to 100 sows at a rate of two litters each and 120-130 lambs to 100 sheep.

Many USSR kolkhozes and sovkhoses now have achieved even better results. At the sovkhos "Rodina", Saratov Rayon, Orenburg Oblast, 102-106 calves per 100 cows are born annually and at the kolkhoz imeni Kalinin, Gorodenka Rayon, Ivano-Frankovsk Oblast, 100-104 calves are born per 100 cows. Over a long period about 91-94 calves per 100 cows are born on farms of the Moldavian SSR, L'vov, Zhitomir and Fergana Oblasts. At over half the kolkhozes of Crimean Oblast 97 and more calves per 100 cows were born in 1982-1983 and the birth rate overall was 95 calves per 100 cows. At the kolkhoz "Gruziya" of Genichesk Rayon, Kherson Oblast, for over 10 years, 130-150 lambs have been born per 100 sheep. At the best farms of the UzSSR 135-140 lambs per 100 sheep are obtained. The farms of the UzSSR, TuSSR and ESSR have a birth

rate of over 115 lambs per 100 sheep. At LiSSR kolkhozes and sovkhoses more than 2000 piglets per 100 sows are born. The indicators of the LaSSR, ESSR and Leningrad Oblast are close to these. More than 2200 piglets per 100 sows are born at the swine-breeding complex imeni 50th Anniversary of the USSR, Gor'kiy Oblast.

The results for 1983 in comparison with 1982, for USSR sovkhoses and kolkhozes as a whole, were 1.1 million more births of calves, 2 million more of piglets and 78,000 more of lambs; there was an increase of 2 calves and 25 piglets respectively per 100 females.

At 30% of farms 90 or more calves per 100 cows were born. This was possible thanks to a high degree of organization and close attention to herd reproduction on the part of directors and specialists at the kolkhozes and sovkhoses as well as agricultural agency workers and to fulfillment of construction plans for breeding facilities and facilities for animal insemination as well as arrangements for transportation and installation of laboratory equipment. Important factors have been the introduction of new, progressive forms of animal maintenance and insemination, continuous milk production and herd reproduction, a rotating system of insemination of animals as well as improved training and pretraining of specialists in animal reproduction and artificial insemination and incentives for workers who contribute to a high offspring yield.

However, the yield of calves still remains low on many farms. Last year, on farms of the KaSSR, every third cow was barren. Farms in the following regions produced fewer than 75 calves per 100 cows: AzSSR, GSSR, the Rostov, Amursk, Chita, Tambov, Volgograd, Bryansk, Ashkhabad and Bukhara Oblasts, Yugo--Osetinsk Autonomous Oblast and the Checheno-Ingush ASSR.

A high rate of barrenness among cows brings about considerable economic losses in livestock rearing. This loss consists in underproduction of offspring, unscheduled replacement of old and underage animals in reproduction and the expenses of maintaining barren females.

As examination has revealed, barrenness in female animals and low yield of offspring are caused by inadequate animal nutrition, disturbance of hygienic conditions of animal maintenance, underbreeding of young to reinforce the herd, lack of regular gynecological examination, delays in treating and culling out females not suited for reproduction and faulty artificial insemination.

Reducing the length of the dry period, extremely long nursing and the various effects of stress all cause disturbance of the sexual cycles of animals, complications during gestation, embryo mortality and abortion.

Both during gestation and after birth, undernutrition with respect to inadequacy or imbalance of digested protein or individual amino acids, the sugar-protein ratio, vitamin and minerals and feeding of female livestock is one of the most important causes for a lowering of herd reproductivity.

Let us note that in a number of kolkhozes and sovkhoses where silage and straw are the basis for rations, an effort is frequently made to alleviate shortages and poor quality of feed by giving more concentrates. As a result disturbances of metabolism and hormone imbalance occur, adversely affecting the animals' reproductive function. The viability and survival characteristics of offspring of such animals falls sharply.

Even today, at many kolkhozes and sovkhoses of a number of republics, little attention is paid to the organization of facilities for parturition and of preventoria. Calving of cows and heifers often takes place under unsanitary conditions; the result is different postparturitional complications, gynecological disorders and lengthening of the period of service or even barrenness.

The continuous system of milk production and herd reproduction is an important direction in improving the upkeep of female cattle and increasing the yield of calves. It is based on the upkeep of animals in particular locations in dependence on the cows' physiological condition.

The continuous system of milk production makes it possible to better maintain conditions under which more productive artificial insemination of cows in the first 30-45 days after normal birth and in the postparturitional period are to be carried out. Such conditions include: maintenance of cows in the dry period in a special area with their subsequent transfer to the calving area, organization of calving in isolation stalls and provision for the normal course of the postparturitional period. Data show that calving in isolation stalls helps prevent disorders in calving and diseases of the postparturitional period. At the beginning of 1984 the continuous system had been introduced at 14,000 farms and 7.2 million cows were involved. By the end of the Five-Year Plan 16,000 farms were to be transferred to the new technology with maternal livestock numbering 10 million.

Appropriate introduction into the herd of well-developed heifers and primiparous females plays an important part in increasing the reproductivity of animals and raising the numbers of animals in a herd. This problem receives considerable attention at the kolkhozes and sovkhoses of the Baltic Republics, MSSR and Moscow, Leningrad, L'vov, Ivano-Frankovsk and other oblasts. Here specialized farms have been established for breeding reinforcements in cattle and as a rule insemination of calves in these farms is carried out at the age of 16-18 months. However, good conditions for breeding reinforcements have still not been established in the Caucasian and Central

Asian republics and in a number of oblasts of the RSFSR and Kazakhstan. In the female stock this causes incomplete maturation in some animals which then as a rule are unsuitable for reproduction or which give birth to young that cannot survive, as well as primiparous animals that in most cases are ill and usually culled out. In recent years 40% and more of cattle over 2 years old have never been inseminated in Kursk and Rostov Oblasts, Dagestan ASSR, Kabardino-Balkar ASSR and the GSSR, AzSSR and TuSSR.

Significant injury to the reproductivity of the herd causes abortions and high mortality rates in offspring. Owing to these causes, at farms of the RSFSR, 2-7% of calves are lost.

It is already generally acknowledged that artificial insemination of animals plays an important part in the organization of herd reproduction. However, in actual fact there are some flaws. Less than 50% of the herd undergoes artificial insemination in the Caucasian and Central Asian Republics, in a number of oblasts of KaSSR and the Non-Chernozem Zone of the RSFSR. This occurs when artificial insemination facilities for cattle operate seasonally, only in the fall and winter.

The network of artificial insemination stations operating in the country makes it possible to inseminate the whole maternal animal stock of the USSR with sperm from sires whose genetic value is significantly above average. Calculations show that with the presently existing number of bulls at these facilities, a ratio of 2800 cows and calves per bull per year would have to be maintained to inseminate the entire female animal population. Such an indicator has already been reached in the LiSSR and the state breeding stations of the UkSSR, BSSR and MSSR are close to it. However, at breeding stations in the KaSSR the ratio is only 1300 calves and cows per sire. In the ArSSR and AzSSR it is around 1000 per bull.

It is to be noted that in a number of republics individual obstetric stations are located in poorly suited facilities characterized by a low level of technology in obstetrics and dilution and preservation of sperm, so that reproductivity is reduced. On many farms cows and calves are bred in farmyards, pens and other inadequate facilities. This causes gynecological disorders, embryo mortality and, in the final analysis, sterility.

Standard facilities are found on only 50% of farms in the KiSSR and Penza and Perm Oblasts, for example.

Experience has shown that an inadequacy of cadres and low level of technicians in artificial insemination leads to infertility among the female stock. For this reason, in the Karakalpak ASSR, for instance, only 57 calves are born per 100 cows.

An important part in herd reproductivity belongs to appropriate and correct determination of insemination among cows and offspring. The USSR Ministry of Agriculture has ordered for agricultural enterprises and organizations very exact monitoring of offspring on the day of birth, registration of all abortions and stillbirths and also deaths of offspring. Those who infringe this system will be made to answer for it. However, specialists at the farms frequently still violate this order flagrantly.

The material and technical outfitting of obstetric facilities and those for artificial insemination of agricultural animals has a great influence on herd reproductivity. In a number of oblasts there have been cases of carelessness in handling and protecting equipment. On some farms of the RSFSR, UkSSR, KaSSR and KiSSR instruments for insemination of sheep are stored under unsanitary conditions; tanks for liquid nitrogen taken from vehicles are not kept under cover and faulty hoses are used as cords. There have been cases in which directors of state breeding stations, breeding enterprises and farms have failed to complain to manufacturing plants upon receiving new articles of poor quality or entirely useless ones. All this leads to overexpenditure on costly laboratory and technological equipment and increase in the expense of artificial insemination of animals.

Numerous scientific studies and the findings of the foremost collectives have reinforced the fact that improvement of herd reproductivity, increases in female fertility and growth of the birth rate can successfully occur only with multilevel solutions to problems in the system of animal reproduction. An example is quite convincing: in L'vov Oblast starting with 1975 the annual birth rate was 90 or more calves per 100 cows; nevertheless in 1983, for example, 94 calves per 100 cows were born. Complex measures are being carried out in the oblast to intensify the reproductivity of large horned cattle. The plan stipulates introduction of scientific achievements and state-of-the-art-findings, realization of organizational and economic findings and veterinary measures as well as stipulating deadlines for fulfillment and responsibilities of those in charge.

Once the subdivision and group maintenance of the maternal stock was established, it was possible to use the female stock intensively with high-quality sires.

At the farms of the oblast the food base has improved with introduction of high-quality fodder. Everything is aimed at successful insemination of cows at a favorable interval after normal dry periods and of young females 16-18 months in age.

To effectively and promptly monitor how technological demands of reproduction are met in the farms, rayons and oblasts technological animal-breeding councils have been established. They are composed of animal-husbandry specialists, directors of subdivisions, scientists and leaders in production. At

the monthly sessions of the councils fulfillment of quotas for insemination of animals, number of births, growth of offspring, transference of young animals into the basic herd and culling out of animals are analyzed and ways of eliminating shortcomings are found.

As a result, about 25% of the oblast's farms showed a birth rate of 100 calves and over per 100 cows by 1983. Many kolkhozes and sovkhoses have a birth rate of 105 calves and over. For example P. M. Sosnovskiy, technician for artificial insemination at the "Avant-Garde" kolkhoz of Kamenka-Bugskaya Rayon, who has received the order "Laborer of the Red Banner" as an award, has obtained birth rates over more than 10 years of 105 and ~~more~~ per 100 cows (in a herd of 700). N. V. Zadorozhnaya, technician at the Ivan Frank kolkhoz of the same rayon, has worked at the farm since 1975, obtaining 102-105 calves from 100 cows annually.

The use of artificial insemination of large horned cattle in Kazakhstan by vanguard technicians deserves attention. They were assigned higher social obligations for 1984 and addressed to all workers at kolkhozes, sovkhoses and other agricultural enterprises the call to compete to show model organization of the reproductive herd with birth and rearing of a maximum count of calves.

The Presidium of the Kazakh Republic Trade Unions Council and Kazakhstan Ministry of Agriculture colleagues as those of the Kazakhstan Ministry of the Fruit and Vegetable Industry approved this appeal.

Conditions of socialist competition in the republic were confirmed and recommendations for salaries for technicians for artificial insemination of large horned cattle were made. Sweeping discussion was recommended of ways to develop socialist competition among technicians in artificial animal insemination in order to achieve high indicators of cattle reproduction.

The winners of the Republic competition are distinguished with the Kazakhstan Council of Professional Associations Certificate of Honor and the Certificates of Honor of the KaSSR Ministry of Agriculture, Ministry of the Fruit and Vegetable Industry and Committee of the Trade Union of Agricultural Workers and the following monetary rewards: for a birth rate of 100 and more calves per 100 cows and heifers--1000 rubles; for 95-99 calves--900 rubles; for 90-94 calves--800 rubles; for 85-89 calves--400 rubles (with insemination of not fewer than 400 cows and heifers).

For the benefit of the winners of the socialist competition 100 free trips to sanatoria, rest homes and tourist points are being arranged.

Owing to improved and everywhere more scientific reproduction techniques, even this year shows more efficient and increased reproduction and conditions under which animal husbandry can become more productive.

LIVESTOCK

CHERKASSY OBLAST LIVESTOCK RAISING METHODS PROMOTED

Kiev PRAVDA UKRAINY in Russian 19 Jul 84 p 2

[Article by N. Talalay: "The Cherkassy Experience and Barriers Along the Way"]

[Text] For the seventh year in a row the livestock farmers of Cherkassy Oblast have been supplying meat combines with cattle that was highest in weight and best in nutritional state in the republic. Thus, the average weight of one head was over 400 kilograms and 85-90 percent of the herd had been brought up to the best nutritional state. Because of this alone, enterprises receive tens of millions of rubles in profits extra.

In beef production Cherkassy enterprises have significantly surpassed many other oblasts. For example, the bullocks from neighboring Poltava, Kiev, Vinnitsa, Kirovograd and Khmel'nitskiy oblasts delivered to the meat combine in the course of 3 years of the five-year plan belonged to the lower weight categories. Last year Poltava and Cherkassy oblasts sold the state an equal amount of meat. However, in order to accomplish this the farmers of Poltava Oblast had to deliver 35,000 more cattle to the meat combine. Similar examples can be cited in other oblasts. The achievements of Cherkassy farmers are stable. Their success is not accidental or temporary; it is insured against many unexpected occurrences and is based on a firm foundation.

Comparisons for Reflection

Whenever there is a discussion about the achievements of Cherkassy farmers in regard to beef production, someone always says that the oblast sows a great amount of sugar beets and that the haulm and pulp are supplementary feeds. This is true. Now let's make some comparisons. Khmel'nitskiy Oblast has the same amount of acreage in sugar beets as Cherkassy Oblast. But Cherkassy

enterprises produce 137 quintals of meat and 515 quintals of milk per every 100 hectares of agricultural lands; Khmelnytsky farmers--only 87 quintals of meat and 345 quintals of milk.

In Vinnitsa Oblast sugar beets occupy 74,000 hectares more plowland, and in Poltava Oblast--14,000 hectares more, than in Cherkassy Oblast. At the same time, per every 100 hectares of acreage Vinnitsa farmers produce 43 quintals less meat and 142 quintals less milk; Poltava farmers--39 and 110 quintals less respectively. As we can see, sugar beets do not play the main role.

The following calculations will demonstrate the importance of the delivery weight of bullocks in increasing meat production. If all enterprises increased it to Cherkassy levels the republic would yield over 300,000 tons of beef additionally each year.

Without detracting from Cherkassy achievements, let us note that they are not record achievements by far and are not even the limit. There are many reserves here which will be discussed below. Today's level is a norm which all enterprises can and are obliged to reach. After all, the Food Program states that the basic direction for increasing meat resources must be the accelerated growth in beef production. A specific goal was established: "To curtail the fattening period and to strive to sell calves with the highest weights--no less than 400-500 kilograms."

"But that's not until 1990!" say some managers to justify themselves. Such remarks are invalid. The biological potential of the cattle breeds available to enterprises allows them to achieve such a weight. Everything depends on the level of organization and the status of feed production.

Cherkassy livestock farmers are persistently and systematically nearing the goal indicated by the Food Program--the 500 figure. At the same time, the enterprises of Volyn, Voroshilovgrad, Zaporozhye, Zhitomir, Nikolayev, Odessa, Rovno and Sumy oblasts still delivered cattle weighing less than 350 kilograms during 3 years of the current five-year plan. There is something to think about here for responsible workers of the agricultural ministry, party committees, oblast and rayon agro-industrial associations and kolkhozes and sovkhozes.

Dependable Foundation

PRAVDA UKRAINY has discussed on several occasions how, by increasing specialization and inter-enterprise cooperation in livestock raising, Cherkassy farmers made the transition in beef production to an intensive, industrial foundation. This was the stable foundation on which this branch of livestock raising is based in the oblast.

In Cherkassy Oblast 39 special farms were created to receive 10-20 day old calves from enterprises for fattening. This is very advantageous for dairy kolkhozes--the dairy herd is freed of the calf "trains," and the opportunity arises to improve the care of cows and increase their productivity. Special farms which take on the guardianship of calves are morally and materially

interested in providing them with appropriate care and feeding, thereby creating a dependable base for a high level of productivity.

The faster calves grow, the higher the weight gain (with the optimal expenditure of feed) and the larger the profit gained by special farms. Special starter feeding has been organized there and a high level of mechanization of production processes has been achieved. This is why expenditures and the cost of weight gain are low and labor productivity is high.

In the course of 1.5 years calves on special farms are fattened to a weight of 350 kilograms. At this point the role of the special farm comes to an end. Let us add that last year the profitability of these enterprises equalled 20.3 percent and that 8,666,000 rubles of clear profits was achieved.

The special farms are the first link in the industrial line. After the animals have been fattened to a weight of 350 kilograms they are transferred for final intensive fattening to inter-farm enterprises. Two special farms are exceptions--imeni Ostrovskiy and Kommunist, which combine feeding and final fattening because they are located near sugar plants.

Inter-farm beef-production enterprises have been built in each rayon on the sites of former fattening points in sugar plants. They do not have land. Pulp, treacle and feeds supplied by shareholder enterprises are used for fattening. The effectiveness of fattening is fairly high. Last year only 7.5 quintals of feed units were expended per quintal of weight gain. In Pal'mirskoye Inter-Farm Enterprise the cost of 1 quintal of weight gain comprised 77 rubles; in Nabutovskoye--87 rubles. Cattle was sold at a weight of 434 kilograms. The profitability of the branch is 24 percent and 17,910,000 rubles of clear profit was achieved.

The indicators for 6 months of the current year are even higher. In 96 days of final fattening the weight gain in each head of cattle equalled 105 kilograms. The delivery weight was 459 kilograms.

During 3 years of the five-year plan 293,200 head of cattle were fattened in the inter-farm enterprises of Cherkassy Oblast. The increase in meat, in live weight, was 24,000 tons, or 10.6 percent more than foreseen by the plan for 3 years. Only 7.8 quintals of feed units and 16 man-days were expended per quintal of weight gain and its cost equals 97 rubles.

Today inter-farm enterprises produce a significant amount of the beef that supplies state resources. By the end of the five-year plan Cherkassy farmers plan to produce 86 percent of their total volume of beef on an industrial basis. The average delivery weight is to be increased to 440-450 kilograms and no less than 99 percent of cattle is to be sold in the highest nutritional state.

In this way, the oblast has developed a firm, scientifically-based system of intensive beef production that has been tested over the long-term. It is clear that in this matter a certain staging was adhered to, that enterprises joined cooperatives voluntarily, that organizational forms and directions were

selected on a scientific basis, that economic independence and democratic centralism in management were preserved and that there was strict adherence to the material interest of enterprises. A final goal was also stated--to increase production output with minimal expenditures. With regard to this a precise system of moral and material incentives was created for livestock farmers to stimulate them to achieve high end results.

The Reserves That Are Available

Let us note that the UkSSR Ministry of Agriculture has been trying to broadcast the Cherkassy experience for a number of years. In 1982 there was a scientific-practical seminar directly in oblast enterprises. Participating in it were the directors and specialists of all oblast administrations of agriculture. In April of this year the agricultural ministry generalized the work experience of agricultural enterprises in Cherkassy Oblast with regard to the industrial production of pork and sent recommendations to all oblast agricultural administrations. Delegations came from almost all oblasts of the republic to learn about the Cherkassy experience.

The practical return from the efforts made was noted. During the first half of the current year cattle weighing over 400 kilograms was already sold by enterprises of Chernovitsy, Ternopol and Ivano-Frankovsk oblasts. Vinnitsa and Lvov oblasts came close to this figure. This is gratifying!

At the same time, statistical data shows that for a long time now beef production in the enterprises of the republic has been increasing as a result of increasing the herd and not because of intensive factors. This has occurred as a result of a decrease in feed quality. Here we come to still another important aspect of Cherkassy experience--feed production.

Even the firmest organizational-technological system in livestock raising is dead without a stable feed base. In the republic as a whole feed production is increasing. During the Eighth Five-Year Plan 48.2 million quintals of feed units were utilized; during the 10th--already 68.5 million quintals. Still the seeded feed hectare by far does not provide a full return. Whereas in Cherkassy Oblast about 45 quintals of feed units are obtained per hectare, in Kiev Oblast 8 quintals less are obtained, in Vinnitsa Oblast--10 quintals less and in Poltava Oblast--12 quintals less.

We do not have to mention the significance of feed quality and its balance with regard to digestible protein. In the same Cherkassy Oblast there are great reserves even in the best enterprises which are involved in feed production. If the feed fields of kolkhozes and sovkhoses were half perennial grasses, then with a productivity of 315 quintals per hectare (1983) they would have produced 44,000 tons of digestible protein over and above what they had. They could have produced an additional 47,000-50,000 tons of meat.

However, in Cherkassy Oblast perennial grasses make up 35 percent of feed fields, in Nikolayev Oblast--22 percent, in Zaporozhye and Khmel'nitskiy oblasts--24 percent and in Kharkov Oblast--28 percent. These are average

figures. For example, in Kiev Oblast, which is not in the lowest ranks in general, in 60 enterprises less than 15 percent of the area of feed fields is in feed grasses, in 52 enterprises--less than 20 percent and in 113 enterprises--less than 30 percent.

In all oblasts comprehensive plans have been developed with regard to increasing the production of feed and feed protein. They were elaborated on the basis of scientific achievements and progressive experience. According to these plans all enterprises were to increase the proportion of perennial grasses, rich in nutritive substances and particularly in protein, to 50 percent of the total acreage used for feed purposes.

In speaking about perennial grasses it should be noted that even in leading enterprises it is not always possible to see a broad "assortment" of them. Usually the selection is narrowly limited--alfalfa, sainfoin and clover. Where are the high-yield and protein-rich feed crops such as sweetclover, awnless brome grass, orchard grass, timothy, oatmeal, rye grass, pyadvynets rogatnyy [Translation unknown], sorghum-Sudan hybrids and oil-bearing radish? A new feed crop has already appeared--Rumeks-4 hybrid sorrel. This year on the experimental field of the Ukrainian Institute of Farming during the first harvest 1,121 quintals of green mass was produced per hectare. Within a month green mass again grew on the mowed fields and no fewer than 600 quintals per hectare were harvested. A single feed unit of Rumeks-4 contains 115-118 grams of protein.

Perennial grasses--legumes and grasses--sown in mixtures are much more effective than pure stands. Why don't they exist in most enterprises?

A significant portion of feed acreage is occupied by corn for green fodder and for silage, which is harvested in the early stages without ears. But its nutritive value is not high. In addition, the crop is labor-intensive and requires a large quantity of fertilizer. Let us say that to obtain 1 quintal of digestible protein 120-130 kilograms of active substance in mineral fertilizer must be expended. The same quantity of protein can be obtained from perennial leguminous grasses by utilizing only 5-11 kilograms of mineral fertilizer. We must also consider this aspect of savings.

In most of the republic's enterprises feed production is in need of radical alterations. Here the workers of the Central Feed Production Board of the UkSSR Ministry of Agriculture and specialists of oblast agricultural administrations is deserving of serious criticism. The feed question does not leave the agenda, discussion abounds, recommendations and decisions are made but things do not change. Here attributing problems to a shortage of perennial grass seed is not well-grounded. Every enterprise can and must supply itself with seed by adhering to the known technology.

Let us summarize. Any valuable experience is not like a brick that can be moved from one place to another. It is more like an entire building which must be built again according to a ready design or by using a ready design as a basis. The Cherkassy experience in beef production is akin to a building complex. It includes specialization and concentration, inter-enterprise

cooperation, a radical renovation of old and a building of new livestock-raising facilities and feed storehouses, the preparation of trained cadres of livestock farmers, a progressive form of labor organization and a stable feed base. Finally, it includes extensive organizational and educational work by party and soviet organs.

Today it is not enough to simply broadcast the new. It must be organized, introduced and spread wisely. While doing this the course of introduction must always be under control and the matter must be brought to a logical end. The UkSSR Ministry of Agriculture must make the organizational beginning in this important matter.

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CSO: 1824/615

REGIONAL DEVELOPMENT

EFFICIENCY OF KAZAKH FARM, FIELD OPERATIONS EVALUATED

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 7, Jul 84 pp 2-4

/Article: "Reserves of the Rural Economy"/

/Excerpt/ The intensification of agricultural production -- the main course to be followed.

Increasing the return from resources and reimbursement from capital investments

Improving the economic methods of management and introducing use of the collective contract into operations in the rural areas on a more extensive scale.

The formation of a new type of economic thinking -- a call of the times.

I.

Reserves of the rural economy... They exist at all of the republic's sovkhoses, kolkhoses, rayons and oblasts. The placing of these reserves in operation in all areas is a decisive factor with regard to the implementation of the Food Program. During the All-Union Conference on the Problems of the Agroindustrial Complex, it was pointed out directly: "Conditions have now been created in the rural areas which make it possible for each kolkhoz and sovkhos to increase their production of goods, develop resources, raise their profitability and lower expenditures."

Life requires that increased attention be given mainly to the intensive factors of economic growth. Experience has shown that intensification can be carried out with respect to all branches of agricultural production: the grain economy, potato production, vegetable production, beet production, cotton production, beef and dairy cattle husbandry, sheep raising, swine raising, poultry production and others. The republic possesses a reliable foundation for accomplishing this, a foundation created as a result of the consistent implementation of the party's agrarian program and the decisions handed down during the May (1982) and subsequent plenums of the CPSU Central Committee. The logistical base of the agrarian sector has been strengthened, the potential of both farming and animal husbandry has increased and the expertise of agricultural workers has improved.

On the average, for each sovkhos in the republic there are 14,600 hectares of arable land, 2,673 head of cattle, more than 12,300 sheep, 859 hogs and 418 horses. The power engineering capabilities per worker -- 47 horsepower. For each farm there is an average of 93 tractors, 46 grain harvesting combines and 44 automobiles.

The production-technical might of the Kazakhstan rural areas continues to increase. Today the overall expenditures for agriculture, including the internal resources of agricultural enterprises and bank credits, amount to more than 5.99 billion rubles, or more than the figure for last year by 7.2 percent.

The resources allocated will be used for increasing the deliveries of modern equipment to the farms and expanding the construction of livestock complexes, poultry factories and other production and social-cultural installations. The machine pool will be augmented by the addition of almost 30,000 tractors, 16,000 combines, 24,500 trucks. The mineral fertilizer deliveries will be increased to 890,000 tons of nutrients.

In response to this tremendous amount of assistance, Kazakhstan must play an even greater role as the country's largest grain and livestock base. In particular, it must not only fulfill but in fact over-fulfill the plans and socialist obligations for this current year and the five-year plan as a whole. The primary obligation of the party organizations and the collectives of kolkhozes, sovkhoses and agroindustrial associations is that of utilizing the existing logistical resources and also those allocated by the state in an efficient manner, such that a stable increase will be achieved in the production of field and farm products and a greater contribution made towards implementing the Food Program. The decisions handed down by the December (1983), February and April (1984) plenums of the CPSU Central Committee and the advice and instructions furnished by the General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet K.U. Chernenko on problems concerned with implementing the agrarian policies of the CPSU serve as a guide for action in this regard.

The urgent tasks of the party, soviet and economic organs, with regard to raising the efficiency of agriculture and its associated branches, were defined more specifically during the All-Union Economic Conference on the Problems of the Agroindustrial Complex, the carrying out of which has now become a daily concern of the agricultural workers.

The party attaches special importance to raising the effectiveness of the potential created in the rural areas and also to increasing the return from resources. A considerable amount of work is being carried out throughout the republic in this regard. As a result, the volume of gross agricultural output is increasing. Even during last year, an extremely dry one throughout the republic, 800 million poods of grain were obtained. And this year the grain purchases must exceed 1 billion poods. The sovkhoses and kolkhozes have increased their sales of meat, milk and eggs to the state while simultaneously increasing the numbers of livestock and poultry being maintained.

A proper return is being obtained from use of the logistical resources of sovkhoses and kolkhozes and the economic reserves found in Kustanay, Aktyubinsk,

Kzyl-Orda, Uralsk and other oblasts. The average annual volume of gross agricultural output in Aktyubinsk Oblast during the 11th Five-Year Plan increased by 73 million rubles compared to the 10th Five-Year Plan. The oblast completed its grain five-year plan ahead-of-schedule and the sovkhozes and kolkhozes earned 106.8 million rubles worth of profit based upon last year's results alone. On farms in Uralsk Oblast it amounted to 174.5 million rubles, Kustanay -- 170.2 million, East Kazakhstan -- 105.5 million, Alma-Ata -- 71.6 million and Chimkent Oblast -- 68.2 million rubles.

But the return being realized from capital investments and from the potential created at kolkhozes and sovkhozes throughout the republic cannot be considered as adequate. On many farms and in many rayons and oblasts, it is not only not increasing but in fact it is even decreasing. For example, let us take Tselinograd Oblast. Over the past 3 years, more than 500 million rubles were invested in agricultural development. But the branch's average annual gross production decreased by 50 million rubles compared to the 10th Five-Year Plan. Last year, 84 farms throughout the oblast sustained losses. Certainly, many of them suffered from the drought conditions. But weather was not the only factor involved. Indeed, 78 sovkhozes and kolkhozes succeeded in operating on a profitable basis under the same conditions. This tends to indicate that at the backward farms the level of farming and animal husbandry management was low and that poor use was made of the available reserves. According to the results for the three years of the five-year plan, the oblast had fallen behind in its sales to the state of grain, potatoes, vegetables, meat, milk and wool. All of the measures required for overcoming the degree to which they have fallen behind must be undertaken.

The effectiveness of management at kolkhozes and sovkhozes in Kokchetav Oblast is low, with 138 of them operating on an unprofitable basis. Last year, they sustained losses amounting to 46 million rubles.

In order to strengthen the economy, an increase must be achieved in gross agricultural output on an accelerated basis in all areas. In a report delivered before the 13th Plenum of the Central Committee of the Communist Party of Kazakhstan, member of the Politburo of the CPSU Central Committee and 1st secretary of the Central Committee of the Communist Party of Kazakhstan, Comrade D.A. Kunayev noted that the most important concern has been and continues to be the grain problem. Importance is attached to increasing sharply the production of wheat, especially the strong, durum and valuable varieties.

A requirement exists for ensuring the stable fulfillment of the procurement plan for meat and other animal husbandry products, for raising the production of young stock, for eliminating cattle plague and for realizing improvements in all of the quality indicators. The quantities of coarse and succulent feeds required must be procured on all of the farms this year in order to achieve the improvements desired in animal husbandry.

These instructions constitute a specific program of work for the rural party organizations, local soviets of people's deputies, agricultural organs, RAPO's /rayon agroindustrial associations/, and for the collectives of sovkhozes and kolkhozes.

II.

An increase in the yield of products per unit of available and newly received material and financial resources (and this is a chief concern with regard to intensification) can only be achieved upon the condition that a dynamic increase is realized in the yields for all agricultural crops and in the productivity of the livestock and poultry. There are almost 300 sovkhoses and kolkhozes in the republic that are consistently obtaining more than 20 quintals of grain per hectare, approximately 200 are obtaining 2,500 or more kilograms of milk per cow annually and hundreds of sovkhoses are selling cattle for meat purposes at an average live weight of 400-450 kilograms and sheep -- at 45-50 kilograms each. Their example is deserving of dissemination on an extensive scale.

The task has been assigned throughout the republic of raising the grain crop yield in the near future to 15 quintals per hectare and also increasing the yields of potatoes, vegetables and technical and forage crops. A persistent campaign must be carried out in all areas in this regard in order to ensure that each field and each plantation produces a maximum return this year.

The livestock breeders are concerned over the need to increase the milk yields and the weight increases in cattle. This is particularly important in view of the fact that since the beginning of the year a number of sovkhoses and kolkhozes have fallen seriously behind in the production of farm products. For example, by the beginning of May 18 farms in Taldy-Kurgan Oblast had fulfilled their semi-annual task for the sale of milk to the state by only 18-39 percent. The sovkhoses Aral'tyubinskiy, imeni Shevchenko and imeni Kirov have turned in similar summaries.

The average delivery weight for cattle and the milk yield per cow on farms in Kustanay Oblast have declined compared to last year. There has also been a decline in the attention being given to the fattening of livestock in Guryev Oblast. The average daily weight increase per head of cattle here fell to 230 grams, sheep -- 57 and hogs -- to 103 grams.

On a number of farms, insufficient offspring are being obtained and this tends to indicate that not enough work is being carried out in connection with reproduction of the herd.

The summer is now at its peak. The time is at hand for organizing grazing operations and the fattening of the animals, in the interest of raising their state of nourishment and productivity. The republic's farm workers possess rich experience in obtaining more milk and in fattening their livestock in a skilful manner and this experience must be employed extensively in dairy and beef cattle husbandry.

In keeping with the modern scales and volumes of agricultural production, exceptional importance is attached for intensification purposes to raising labor productivity in a steady manner. For it is precisely this factor (in view of the fact that no substantial flow of human resources into agriculture is expected) that will make it possible to obtain the desired increase in gross output. At the 40 Let Kazakhstana Kolkhoz in the capital oblast, the average annual number of workers compared to the 10th Five-Year

decreased by 50 individuals. But gross output production increased noticeably here. The amount of such production per kolkhoz worker amounted to 5,400 rubles. Computations reveal that each one of them produced an average increase in output of more than 530 rubles compared to the 10th Five-Year Plan.

Unfortunately however, production is increasing only slowly at many sovkhoses and kolkhozes throughout the republic and especially in Semipalatinsk, Pavlodar and Dzhambul oblasts.

The machine-worker ratio in agriculture is constantly increasing and thus each farmer and livestock breeder must produce more output in his area of activity.

But not at any price. The agrarian economy must be thrifty in all areas. But what does this require? All branches must operate on a profitable basis, expenditures for the production of goods must be reduced, savings must be achieved in the use of material, financial and labor resources and mismanagement and waste must be eliminated. The following facts were recounted during an oblast economic conference held in Kokchetav. Last year, in Kyzyltuskii Rayon, the Chekhovskii Sovkhoz realized a profit of 387,000 rubles from a grain crop yield of 6.8 quintals per hectare and the Bidaikskii Sovkhoz -- a loss of 970,000 rubles from a yield of 8.5 quintals per hectare. At the first farm, where the grain fields numbered 23,000 hectares, 949,000 rubles were expended in wages for the production of the grain crops and at the second farm (grain fields of 16,500 hectares) -- 1,530,000 rubles, or more by a factor of 1.6 and per hectare -- more by a factor of 2.2. The leaders and specialists at the Bidaikskii Sovkhoz are exercising only weak control over labor expenditures and the resources required for the production of goods and they are tolerating both mismanagement and waste.

Such contrasts are also being observed in other oblasts. They must be overcome by raising the overall level of management and, in the final analysis, production profitability.

The reserves of an agrarian economy are reflected not only in the quantity but also the quality indicators. For example, it is known that growth in profitability ensures the sale of strong and durum varieties of wheat, fine-fiber cotton, 1st grade milk and high quality livestock. This stimulates the purchase prices. But a proper campaign aimed at raising the quality of products is not being carried out in all areas. Only last year, in Semipalatinsk Oblast, 29,000 tons of livestock were turned over to the state, the state of nourishment of which was lower than average or lean and as a result a loss of more than 14 million rubles was sustained. Considerable quantities of milk, wool and leather raw materials are being supplied which are of low quality or which do not conform to the GOST /state standard/.

A situation cannot be tolerated wherein great losses in output are occurring as a result of poor work and untimely harvest operations, especially in the case of vegetables, potatoes and fruit. Again this year, owing to a lack of organization and sluggish operations on the part of some leaders of sovkhoses, kolkhozes and procurement and trade organizations, such incidents have taken place in Alma-Ata, Dzhambul and Taldy-Kurgan oblasts. In preventing losses in fruit and vegetable products and improving their quality, concern must be

displayed at the same time for ensuring that they are delivered to the consumers in the best marketable form and following waste-free processing. A great amount of initiative and persistence is required on the part of the RAPO councils in this regard.

An expansion is presently taking place throughout the republic in the harvesting not only of fruit and vegetables but also grain crops and also in the procurement of feed. Each individual that is associated with this work out on the fields and meadows must not only accelerate the harvest and haying rates but in addition he must prevent losses in the grain and feeds and bring about improvements in their quality.

Animal husbandry cannot tolerate losses in or the unproductive use of livestock, as this can adversely affect the farm economies and lead to a shortfall in the products required by the population. Unfortunately, these negative phenomena are continuing. Over a period of 5 months in North Kazakhstan Oblast alone, 2.4 percent of the cattle perished and in Chimgent Oblast -- 2.9 percent of the sheep. A considerable loss of hogs took place in East Kazakhstan Oblast and horses -- in Dzhezkazgan and Uralsk oblasts.

Farm workers and specialists must display a greater degree of responsibility for fully protecting the livestock, including newly born young stock.

III.

When placing reserves of the agrarian economy in operation, its weak elements should be strengthened. Here importance is attached to raising backward farms to the level of leading ones. Low profitability and unprofitable sovkhoses in our republic are being allocated 297.6 million rubles for strengthening their economies. Moreover, as is known, bonuses have been introduced for such farms for adding on to the purchase prices for such products, mainly livestock products. Towards this end, 500 million rubles are being allocated from the budget annually. A number of planned expenditures by low profitability and unprofitable kolkhozes are also being financed by means of state budgetary funds, for which purpose more than 52 million rubles are being made available.

Thus a substantial increase has taken place in the potential for raising backward farms to the level of profitable ones and for strengthening their economies. Nevertheless, the number of such sovkhoses and kolkhozes is still quite high. For example, in Kellerovskiy Rayon in Kokchetav Oblast, 12 farms out of 15 operated at a loss last year. For the rayon as a whole, these losses amounted to 2.4 million rubles. The kolkhozes Avangard, imeni XXII Parts'yezda, imeni Dimitrov, Zvezda, imeni Kirov, Rodina and imeni Shevchenko sustained losses ranging from 200,000 to 500,000 rubles. Here almost all of the farms failed to realize any profit from the production of milk, beef or pork. This came about owing to feed shortages, the weak introduction of leading methods for the maintenance and fattening of livestock and violations of the technological and labor discipline on the farms.

Some sovkhoses in Tselinograd Oblast which are already in debt to the state are receiving unlimited amounts of bank credit and they are not measuring their expenditures against their income. Certainly, such management is incompatible with today's requirements.

The RAPO's must devote more attention to improving the status of backward sovkhozes, kolkhozes and even agroindustrial enterprises. Proper action is being taken in this regard by the council of the Astrakhan association in Tselinograd Oblast, the experience of which was discussed in SEL'SKAYA ZHIZN'. Such sovkhozes as Stepnyak and Astrakhanskiy were included in the category of backward enterprises. The RAPO proceeded to provide them with complete and all-round assistance. Measures were undertaken aimed at improving the personnel situation at the Stepnyak Sovkhoz. In addition, it was provided with new equipment. A detachment of Sel'khozkhimiya treated 500 hectares of fallow land here and applied a quantity of organic material to the fields that was greater than any amount applied in the past. The most neglected area of operation on the farm was animal husbandry. The RAPO provided assistance in renewing the herd and in modernizing the farms.

And the initial result -- last year the Stepnyak Sovkhoz produced and sold to the state more products than it had the previous year. Moreover, the weather conditions were unfavorable.

Certainly, it may not be possible to repeat the experience of the Astrakhan RAPO in all areas. But one fact is beyond question -- the means must be sought and found in all of the agroindustrial associations for ensuring that each farm is able to develop in a stable manner, that it earns a profit and that it creates the necessary funds and utilizes them correctly.

For it is at the backward sovkhozes and kolkhozes that concern must be displayed first of all for the effective use of arable land, especially irrigated land, for the haying and pasture lands, equipment, fertilizers and other resources. But obviously there should be no reduction in the carrying out of this type of work at other farms, since this must be done in order to advance to higher levels, as is required in order to carry out the increasing tasks of the Food Program.

The effectiveness of the public sector must be supplemented by the development of the private plots of manual and office workers and kolkhoz members and the subsidiary farms of enterprises and organizations. However, insufficient use is being made of the potential afforded by these farms and plots.

In a report delivered during a ceremonial meeting dedicated to the 30th anniversary of the development of the virgin lands, Comrade D.A. Kunayev emphasized: "Based upon the party's requirements, importance is attached to converting all sectors over to cost accounting procedures in a more rapid manner, to introducing use of the brigade contract into operations, to utilizing the price mechanism more skilfully and to increasing the personal interest of all workers in lowering expenses and achieving high final results."

The primary party organizations and the leaders and specialists of sovkhozes and kolkhozes are under an obligation to improve the organization of all economic work in the rural areas, to develop positive principles and to overcome conservatism and unimaginative work.

Considerable importance is attached to maintaining strict order and discipline in the expenditures of logistical and financial resources. But it often happens

that resources are diverted for achieving goals which are not associated with agriculture. There have been incidents involving the construction of institutes, roads and other installations in the rayon centers at the expense of sovkhozes and kolkhozes, the transferring of equipment and the release of fuel and lubricating materials for purposes other than those intended and of the maintenance of supernumerary units. Such incidents must be terminated in a decisive manner.

More bold use must be made of economic methods of management. This will require improvements in the development of economic thought in the specialists and rank and file farmers and livestock breeders. But proper attention is not being given to this fact in all areas, as borne out by the material from Taldy-Kurgan Oblast published in this issue.

Experience reveals that improvements in the economic thought of individuals and high managerial results can best be achieved in brigades and teams which operate on a contractual basis. It is important for them to participate more actively in the republic's competitive inspection under the slogan "For high final results based upon use of a collective contract." The first winners of this movement set a fine example for all. Thus, at the Sovkhoz imeni Gazeta Pravda in Uralsk Oblast, a brigade of operators for the fattening of cattle headed by A. Lyayman is consistently increasing the weight gains and raising their animals to a fine condition. It is striving to raise labor productivity by 2 percent above the plan and to lower production costs by 1 percent, thus providing considerable profit.

The problem concerning the need for continuing to search for new managerial forms and methods for the APK was raised during the all-union economic conference. The appropriate ministries and departments of the republic must be motivated to assist in this regard, particularly in view of the fact that some partners of the sovkhozes and kolkhozes are operating on the basis of the old method and are very slow in converting over to direct relationships.

Improvements must be carried out in the contractual obligations and in the mutual accounts for work carried out and services rendered, between the farms on the one hand and Sel'khoztekhnika, Sel'khozkhimiya and Sel'khozenergo on the other. Here, just as with the entire complex of questions concerned with the efficient utilization of economic reserves, the production workers are waiting to receive more assistance from the agricultural scientists and the specialists of ministries and departments.

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CSO: 1824/637

AGRO-ECONOMICS AND ORGANIZATION

SIBERIAN INSTITUTE DIRECTOR ON APK ECONOMIC INEFFICIENCY

Moscow PRAVDA in Russian 15 Jul 84 p 2

[Article by V. Boyev, director of the Siberian NII [Scientific Research Institute] of Agricultural Economy, VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin] academician: "Not Depending on the 'Tow-line'/'The Food Program: Goals, Practices and Problems"]

[Text] How much does grain cost? Not that which is on the shelves of stores but that which is still in the fields? Probably not every village director or specialist will be able to answer this question correctly. Others have a very murky idea of what production costs, output-capital ratio and profits are.

Alas, this type of ignorance is not harmless. Sometimes it is the reason why in some places investments into the agro-industrial complex are increasing while return remains on the same level or even decreases.

Speaking at the All-Union Economic Conference, Comrade K. U. Chernenko noted the necessity of decisively improving the operations of agro-industrial associations, of raising the level of all economic work, of extensively introducing cost accounting and collective contracts and of utilizing other economic factors.

In recent years in some parts of the country, as for example Siberia, growth in the production of grains, meat, milk and other products has begun to lag behind the pace of capital investments more and more. The cost of production has also increased.

On a contemporary scale an increase in its cost by only 1 percent results in an increase in annual production expenditures of almost 100 million rubles in Siberian kolkhozes and sovkhozes. This is not a small sum. This type of sum could buy, let us say, over 5,000 K-701 tractors.

Sometimes various "objective" reasons are presented as justification. But these cannot always be taken seriously. It happens that neighboring enterprises have very different results from their operations. Let us take Kurgan Oblast. The differences between the indicators of some rayons and the oblast average with regard to the cost of grain reaches 47 percent, potatoes--52 per-

cent and meat--70 percent. The gaps between enterprises and their subdivisions are even greater. Profitable work by some kolkhozes and sovkhoses and unprofitable work by others located in the same conditions is practically becoming the norm.

Recently in Altay Kray and Novosibirsk and Kemerovo oblasts 73 dairy-meat enterprises increased production by 40-65 percent while 55 decreased it by 20 percent and more. Further, in the first group expenditures per 100 rubles of gross production increased by only 7 percent, whereas in the second they increased by 23. Why these contrasts and how can they be justified?

Some people have a tendency to attribute errors in economics to the increased cost of equipment and other resources. Such disproportions actually did exist. The May 1982 Plenum of the CPSU Central Committee eliminated them. But even previously there were many as we say, prosperous, enterprises. Production organization and management were adjusted, economic work was well organized and the return on fields and farms was high. "Objective" reasons were not and are not sought, and an attempt is made to work creatively and conscientiously. Some have become accustomed to working according to the principle of following wherever the crooked path leads. Thus we have errors and losses.

That reminds me of two vessels. On one an amicable and coordinated crew follows the proper course. On the second the crew idles away its time and the vessel drifts according to the current, moving further and further away from the other vessel. The lagging crew is hardly bothered by all of this. They know that even if the current leaves them far behind they will not be abandoned and a towline will be thrown out. Thus it is in our case that a significant number of sovkhoses and kolkhozes provide "towlines" by not actually working to increase the total quantity of production in a region but instead to compensate for underproduction in other enterprises.

Moreover, the passivity of some directors is affected little by material interests; little alarms them from the moral point of view. Those who are on the left flank often evince a feeling of sympathy and sometimes they even have the advantage. As a rule those who lag behind are more abundantly equipped with equipment and materials; patrons help them more. Meanwhile, the internal reserves of such enterprises are utilized poorly.

Such "kindness" often is harmful to the common cause. Of course help must be given, but follow-ups should be made of how this help was utilized and what it yielded. If it was ineffective, then why and who was specifically at fault? Achieving the intensive development of all kolkhozes and sovkhoses and not only of the leading ones means bringing the enormous reserves of the agro-industrial complex into action. Today we feel that this is the priority problem. How can it be solved?

First of all there must be a constant and careful analysis of the status of production and of the elements making up production costs in each enterprise. This is the mirror in which everything is reflected--the quality of work and the level of management, achievements and errors, concealed and obvious irresponsibility. And it is not only the analysis that is necessary. We must

educate all workers--from the director of the enterprise to the machine operator or milkmaid--in economic thought and teach them the skill of measuring expenditures and income.

As of yet, this type of work is being conducted not everywhere by far. For one director the tested "ally" is bad weather--no matter what happens it is to blame! On the other hand, if a year turns out to be successful this is quickly attributed to organizational work. But in Siberia, for example, can we consider bad weather during the harvesting period an unusual circumstance if on the average for 10 years the harvest was not accompanied by rain only 2-3 times? Here we must always be prepared for such conditions. Of course, great anomalies in weather do occur. But they must also be considered, adapting agricultural equipment and technology to them, stockpiling reserves of feeds and seed and utilizing everything provided by the field, meadow or garden with skill.

It is this approach that is taken in the Nazarovskiy Sovkhoz of Krasnoyarsk Kray. During the last 8 years workers have managed to increase gross production output by 11,000 rubles on the basis of 100 hectares of acreage. In productivity of grains this sovkhov can compete with the best Kuban' enterprises--33 quintals per hectare during the last 3 years and over 41 quintals last year. This was done on 12,000 hectares! Moreover, the cost of grain, milk and meat did not increase, in contrast to many neighbors. Today it is about half that of other sovkhoves. Since the beginning of the current five-year plan the workers of Nazarovskiy Sovkhoz have received 30 million rubles in profits. I must add that the sovkhov does not stand out in fund provisions or land quality.

Every branch is well developed here and draws on progressive technology, collective contracts and cost accounting, which have been firmly confirmed in all sections. Specialists are personally responsible for the use of resources. Here everyone knows how to count kopecks and everyone knows how expensive it is to underfeed livestock or to violate crop rotations or work schedules. The ruble has become a constant and strict controller. Money is not spared only for providing rewards for good work.

It is important that other enterprises turn toward economics. Every worker must feel a personal participation in raising production effectiveness. Everything that we have at our disposal--land, equipment, fertilizer and fuel--has been called upon to work to increase production output and to decrease the cost of products.

Again I must return to cost. Today its role is minimal and secondary for some reason. A number of scientists and specialists have elaborated a draft proposal on the order for accounting for and planning expenditures in agriculture. In our opinion, the practical utilization of this document would help to make the relationship between expenditures and income more precise and evident and would provide a green light for cost accounting. But for 3 years the document has been "rolling around" while the country's agricultural and finances ministries and Gosplan work on numerous agreements.

Norms for the expenditure of resources as well as for the reimbursement of labor per unit of production are still very conventional and non-mandatory in nature. Today they are such that they allow for differences of up to a factor of 1.5-2 in the output of the same types of tractors, motor vehicles or combines under similar conditions and of 25 percent and more in fuel expenditure. Isn't this a loophole for various types of dodgers? Isn't this a "lightning rod" for those who tolerate mismanagement and wastefulness? Norms must be brought into line with the requirements of the times.

Often one hears from the director of an enterprise, "Give us additional equipment and fertilizer!" It is essential that production growth be achieved not by means of the limitless build up of resources and not "at any price" but by means of the resources foreseen by the plan.

Favorable conditions have now been created for the universal transition of the village economy to an intensive path. The things that hindered the growth of production effectiveness have been eliminated. A portion of credit debts has been written off and more realistic procurement prices and supplements have been introduced. Together with measures to improve planning, management, supply and technical services this will radically alter the economic conditions for kolkhoz and sovkhoz work. Thanks to this last year the profits of most Siberian enterprises increased noticeably.

However, we should not expect that the new procurement prices will automatically improve financial circumstances. Measures taken by the party and state should be secured by means of specific actions at all levels of management and production organization. First and foremost this applies to the RAPO [Rayon Agricultural Industrial Association] and directly to enterprises. If the directors of associations, kolkhozes and sovkhozes do not restructure operations, then expenditures will continue to grow. The economy is not the problem of economists alone but of all village workers.

There are still many directors who treat the economy as secondary. Many of them have become accustomed to performing mainly in the role of the fixer, the "selector" of an advantageous procurement plan, of resources, of new machines and of building materials. A good half of their days is spent in meetings and conferences. Look at what the engineer of the enterprise is doing. An analysis has shown that the director of the technical service spends 82 percent of this time obtaining spare parts and making various types of agreements. He thinks least of all about the quality of repairs and the operation of machinery.

Economic councils, which until now have remained in the shadow of the bureau of economic analysis, are emerging into the forefront. It is important to organize the efficient training of cadres and competition for the best carrying out of production. A great deal here depends on RAPO specialists and their participation in the elaboration and implementation of plans to raise the effectiveness of the agro-industrial complex.

A heightened sense of economy toward public property is not a tribute to fashion but an immutable condition for normal everyday work. Every agronomist, machine operator and field worker must know well how much the grain from his field is worth.

TERMS OF REVISED STATUTE ON RAYON KOLKHOZ COUNCIL SET FORTH

Moscow EKONOMICHESKAYA GAZETA in Russian No 33, Aug 84 p 14

/Article: "Rayon Kolkhoz Council"/

/Text/ In connection with the creation of agroindustrial associations in autonomous republics, krays, oblasts and rayons, in conformity with the decisions handed down during the May (1982) Plenum of the CPSU Central Committee, the USSR Council of Ministers has approved the changes and additions to the statutes for kolkhoz councils in a union republic, autonomous republic, kray, oblast and rayon, as presented by the Union Kolkhoz Council.

In particular, in the new wording for the statute governing a union kolkhoz council it is stated that a union kolkhoz council examines the proposals by rayon agroindustrial associations on the centralization of individual production-economic functions, provided it involves the transfer of fixed productive capital (agricultural equipment, workshops for the repair of equipment and so forth) from kolkhozes and also the transfer of machine operators and other workers to other organizations and enterprises. There are also other changes and additions.

The new wording for the Model Statute On a Kolkhoz Council, as approved by Decree No. 27 of the USSR Council of Ministers dated 24 April 1984, is published below.

1. A rayon kolkhoz council is a rayon elective public organ of kolkhozes, formed for the purpose of further developing kolkhoz democracy, raising the creative activity of the kolkhoz peasantry, achieving a collective discussion of the more important problems concerned with the life and activities of kolkhozes, summarizing the experience accumulated in production organization, preparing recommendations for utilizing more completely the reserves which are available for improving the public economy and increasing the commodity production of agricultural products in the interest of satisfying the increasing requirements of the population.

The task of a rayon kolkhoz council consists of strengthening kolkhozes in every possible way and implementing in a consistent manner the program developed

by the communist party for the development of agriculture and the social transformation of the countryside.

2. In carrying out its work, a rayon kolkhoz council is guided by the decisions handed down by the Communist Party and Soviet Government, existing legislation, the decrees of all-union and republic congresses for kolkhoz members, republic, kray and oblast conferences for kolkhoz members, meetings for representatives of kolkhoz councils and rayon meetings for kolkhoz representatives, by the decrees of higher kolkhoz councils, the Model Regulations for a Kolkhoz and by the Statute on a Rayon Kolkhoz Council.

3. The chairmen of kolkhozes in a rayon, the leading workers in kolkhoz production, agricultural specialists and the representatives of inter-farm enterprises (organizations) are elected to serve on a rayon kolkhoz council. Kolkhozes, agricultural organs, public organizations and scientists participate in the work of a council.

4. A rayon kolkhoz council:

...examines questions associated with the observance of the kolkhoz regulations and with the organization of control-auditing work at kolkhozes;

...summarizes the operational experience of kolkhozes and inter-farm enterprises (organizations), with the kolkhozes participating in this work, it prepares recommendations on the efficient management of a farm and maximum utilization of reserves, on the efficient utilization of the lands assigned to kolkhozes, on the protection of these lands, on improving the fertility of soils, on land reclamation, the use of chemical processes and the all-round mechanization and electrification of kolkhoz production and it furnishes assistance in introducing scientific achievements and leading experience into operations;

...discusses questions associated with strengthening the kolkhoz economies, raising labor productivity and lowering production costs, achieving thrift and maximum savings in the use of material and financial resources and protecting public property and it prepares recommendations and proposals for raising the economic efficiency of kolkhoz production;

...summarizes experience and prepares proposals for improving production control, planning and intra-organizational accounting, labor organization and wages at kolkhozes and inter-kolkhoz enterprises (organizations) and for introducing use of the collective contract into kolkhoz production operations on an extensive scale:

...examines questions concerned with the correct distribution of profits and prepares recommendations for the efficient use of the fixed and working capital of kolkhozes;

...prepares proposals on the development of subsidiary production operations and trades at the kolkhozes;

...summarizes experience and prepares proposals and recommendations for improving conditions and labor safety procedures, for improving labor discipline

and for developing the social competition at kolkhozes and inter-kolkhoz enterprises (organizations) in every possible way;

...examines the questions posed by kolkhozes and kolkhoz members, their requests and complaints and undertakes the necessary measures;

...summarizes and disseminates the experience of leading kolkhozes in the construction of housing and installations of a cultural-domestic nature and carries out practical measures concerned with improving the working, living and recreation conditions of kolkhoz members and the creation of stable labor collectives at the kolkhozes;

...develops recommendations for utilizing labor resources more completely;

...develops and implements measures for achieving further development for the private plots of kolkhoz members, summarizes their experience and develops recommendations for increasing the numbers of livestock and poultry being raised by the population on the basis of agreements with kolkhozes;

...represents the interests of a rayon's kolkhozes at state, cooperative and other public institutions and organizations.

A rayon kolkhoz council also examines other important questions concerned with kolkhoz life, it prepares appropriate recommendations and proposals and introduces them into operations in the agricultural administration of the rayon executive committee and for other organs of administration and also for a higher kolkhoz council.

5. A rayon kolkhoz council convenes a meeting once annually for representatives from kolkhozes throughout the rayon. Special meetings can be convened for the representatives of a rayon's kolkhozes upon the initiative of the rayon kolkhoz council, in accordance with a request by one third of the kolkhoz's in a rayon and also in response to a recommendation by a higher kolkhoz council.

The norm for representation at a rayon meeting of kolkhoz representatives is established by the rayon kolkhoz council.

6. A rayon kolkhoz council is elected for a period of 2-3 years on the basis of an open vote taken during a meeting of kolkhoz representatives.

A rayon kolkhoz council is elected provided there are not less than three kolkhozes in the administrative rayon.

7. A rayon kolkhoz council issues periodic reports to the press concerning its activities and it also employs other forms for publicizing the work of the council.

8. A rayon kolkhoz council selects a council chairman (a kolkhoz representative) and a deputy chairman from its staff and it also appoints a responsible secretary for the council from among the leading workers of the agricultural administration of the rayon executive committee.

9. A rayon kolkhoz council carries out its work in accordance with a plan which it adopts and it holds two meetings annually. Special meetings of the council can be convened by the council chairman or on the basis of a request by one third of the council's members and also in accordance with a recommendation made by a higher kolkhoz council.

A council's meeting is deemed to be valid when not less than two thirds of its members are present. Decrees handed down by a council are adopted on the basis of a simple majority of votes.

10. The chairman of rayon kolkhoz council organizes the work of the council, carries out its decrees and ensures that all of the organizational work of the council is carried out during the period between meetings.

11. The secretary for a rayon kolkhoz council organizes the preparation of materials for the council's meetings, is responsible for the council's clerical work, prepares responses and explanations for letters and requests by kolkhozes, rayon organizations, kolkhoz members and other citizens and also performs other functions assigned to him by the chairman of the council.

12. A rayon kolkhoz council, in carrying out its work, must ensure that the rights of the kolkhozes and inter-farm enterprises (organizations) are observed, the participants in which are kolkhozes, rights which are called for in their regulations, statutes and existing legislation and it must also promote in every possible way the development of economic independence in the kolkhozes.

The decrees of a rayon kolkhoz council for kolkhozes and inter-farm enterprises (organizations), the participants in which are kolkhozes, are purely of a recommended nature.

13. The preparation of materials for the meetings and also the technical and administrative services for a kolkhoz council are carried out by the agricultural administration of the rayon executive committee.

14. A rayon kolkhoz council has both a seal and stamp bearing its name.

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CSO: 1824/644

AGRO-ECONOMICS AND ORGANIZATION

MEASURES TO REDUCE PRODUCTION LOSS DISCUSSED

Moscow PLANOVYE KHOZYAYSTVO in Russian No 8, Aug 84 pp 96-100

/Article by A. Dekhtyar', deputy chief of a section of USSR Gosplan: "Principal Organizational-Economic Factors Concerned With Reducing Losses in Agricultural Products"/

/Text/ As increases take place in the production volumes for agricultural products, greater importance is attached to the tasks concerned with protecting these products.

The campaign aimed at achieving economies and thrift, reducing losses and raising the quality of agricultural output constitutes one of the principal statutes of the country's Food Program, adopted during the May (1982) Plenum of the CPSU Central Committee. It embodies a special purpose all-round approach for developing the agroindustrial complex, the chief task of which consists of coordinating the work of agriculture and the industrial branches which provide services for it, transport and trade and subordinating all of their activities to the overall final goal -- the production of high quality food products and ensuring that they are delivered to the consumers.

Large-scale measures have been carried out throughout the country directed towards intensifying the production potential of the agroindustrial complex. By the beginning of 1983, the fixed productive capital in agriculture had increased by a factor of 4.7 compared to 1965 and amounted to 272 billion rubles worth; in the processing branches of industry -- a factor of 2.7 and 33 billion rubles respectively.

The capabilities created in the chemical, mixed feed and microbiological industry made it possible to increase the production of mineral fertilizers during this same period by a factor of 3.6, mixed feeds and protein-vitamin additives at state enterprises -- by a factor of almost 4 and microbiological protein -- by a factor of more than 10.

As a result of strengthening the production potential of agriculture and the APK /agroindustrial complex/ as a whole, opportunities were created for increasing the production volumes for agricultural products. During the 1976-1980 period, the average annual volume of gross agricultural output increased by a factor of 1.5 compared to the 1961-1965 period.

However, substantial discrepancies are still being noted in the development of the logistical base for the APK branches and this is causing considerable losses in output. The degree to which agriculture is being supplied with certain types of resources (tractors, agricultural machines, mineral fertilizers, herbicides and others) is lower than the norm at the present time. Fixed capital is being replaced very slowly in the processing industry. At many enterprises the production buildings and technological equipment are obsolete. The requirements for new technological equipment are by no means being satisfied completely and the technical level of a number of machines and types of equipment is lagging behind the modern achievements.

Especially great agricultural product losses are occurring owing to the fact that the kolkhozes and sovkhoses are not being supplied with adequate quantities of harvesting equipment or transport vehicles. In addition, the logistical base required for the initial working, storage and processing of the products is very weak.

Thus, owing to the fact that the kolkhozes and sovkhoses are not being adequately supplied with grain harvesting machines and also taking into account the low reliability and quality of these machines, the harvesting of the grain crops at the present time is being carried out in 22-25 days instead of the optimum period of 7-8 days. This is resulting in a loss of roughly 1-1.5 quintals of grain per hectare or 12-20 million tons annually. Owing to the unsatisfactory hermetic sealing of the combines, the grain losses amount to approximately 5 million tons annually.

In the sugar industry, the length of time required for processing the sugar beets presently exceeds 120 days. By the end of the processing season, the sugar yield obtained from the roots decreases and many beets perish owing to a poor storage technology. If all of the beets were to be processed during the optimum periods, the state could increase its sugar resources by more than 350,000 tons annually.

The May (1982) Plenum of the CPSU Central Committee called for a number of large-scale measures to be carried out for the purpose of eliminating losses, protecting all of the crops grown and thus increasing the food resources. Of these measures, priority importance is attached to further strengthening the logistical base of agriculture and other branches of the agroindustrial complex. Moreover the logistical base for those industrial branches which supply the agroindustrial complex with the principal means of production will be developed at an accelerated rate.

The plans for the branches of industry called for the capital investments to be directed mainly towards developing the production of meat, dairy and fruit and vegetable products, vegetable oils, margarine, sugar, flour and groats. Thus, prior to 1990 the capabilities for producing whole milk products will be increased by a factor of 1.5 and capabilities will be placed in operation for processing 210,000-230,000 tons of sugar beets daily (this will make it possible to shorten the beet processing period by 15-20 days) and also capabilities for the production of 10,000 tons of meat per shift.

The plans also call for the placing in operation of production capabilities for the processing of 10,000-12,000 tons of oil-bearing seed daily, for the

production of 140,000-160,000 tons of fresh-frozen fruit and vegetable products annually and capabilities for the production of 500 tons of cheese per shift. Increases will take place in the capabilities for producing margarine products and fruit and vegetable canned goods and for the processing of skim milk, buttermilk and whey. A considerable expansion will take place in cold storage space.

The plans call for large-scale measures to be carried out in the milling and groats industry. Thus, during the years of the 11th and 12th five-year plans new elevators and stationary grain dryers will be built and capabilities for the processing of grain will be placed in operation at large enterprises and also capabilities for the production of mixed feeds -- at mixed feed plants.

The plans call for capital investments for the erection of product storage facilities to be increased by a factor of 1.6. During the decade, storehouses will be placed in operation at farms and enterprises for the storage of 18.6 million tons of potatoes, vegetables and fruit, root crop storehouses will be erected on farms for 30-35 million tons, hay storehouses for 60-65 million tons and silage and haylage installations for 240-245 million cubic meters. A considerable expansion will take place in the construction of granaries and storehouses for grain forage, grass meal and briquetted and granulated feed mixtures, such that the kolkhoz and sovkhoz requirements for these materials will be satisfied fully.

The country's Food Program has called for the solving of one important problem -- the efficient disposition of the logistical base for the procurement, storage and processing of products throughout the country. In addition to the construction of large enterprises, small enterprises must be created, where it is economically feasible to do so, in the vicinity of kolkhozes and sovkhozes and also directly on those farms where extensive use is being made of prefabricated buildings (modules) made out of light metal structures. In the remote regions of Siberia, Kazakhstan, the Volga region and other areas of the country, the plans call for the construction of small grain receiving enterprises and mixed feed preparation shops. The development and implementation of plans for the disposition of these installations and the extensive use of progressive storage methods are making it possible to lower product losses noticeably and also product shipments during the period of mass procurement operations.

During this current five-year period, the acceptance of agricultural products directly at the kolkhozes and sovkhozes and the shipping of the products using specialized transport vehicles of the procurement organizations have been developed extensively. At the present time, one out of every four farms turns its livestock over in the production areas and one out of every five -- its milk. The number of farms which have converted over to the new system for the delivery and shipping of products is increasing annually as further progress is achieved in creating the logistical base required.

However, this progressive method for the acceptance and shipping of agricultural products is not being introduced into operations in all areas. Whereas, for example, in the Lithuanian SSR, Latvian SSR and Belorussian SSR from 50 to 70 percent of the livestock procured by the meat industry is being

shipped from kolkhozes and sovkhoses, in the Uzbek and Tajik SSR's this work has not even commenced.

The May (1982) Plenum of the CPSU Central Committee called for the completion during the 12th Five-Year Plan of the conversion over to accepting livestock, poultry, milk, potatoes, vegetables, fruit, berries and grapes directly at the kolkhozes and sovkhoses and for the shipping of these products from the farms on transport vehicles made available by the procurement organizations. A great amount of organizational work remains to be carried out in this regard by the USSR Ministry of the Meat and Dairy Industry, the USSR Ministry of the Food Industry, the USSR Ministry of the Fruit and Vegetable Industry and by Tsentosoyuz /USSR Central Union of Consumers' Societies/.

In connection with the technical reequipping of agriculture during the 1983-1990 period, the plans for tractor and agricultural machine building call for mastering the production of not less than 600 and for machine building for animal husbandry and feed production -- not less than 330 types of new, modernized and highly efficient items of equipment. For the food branches of industry, production lines and equipment assemblies will be produced which will raise labor productivity by a factor of 1.5-2, ensure thorough processing of the agricultural products, reduce losses in agricultural output and raise the quality and expand the assortment of food products.

One very important task is that of transport support for the agroindustrial complex. Towards this end, the plans call for transport to be supplied during the decade with 3,000-3,060 trucks, 3,200-3,300 tractor trailers and a large number of milk trucks, semitrailer-livestock trucks and refrigerator trucks and for the Ministry of Railways to be supplied with refrigerator freight cars.

Measures have been outlined for satisfying the requirements of the food branches of industry, trade and agriculture for packaging and wrapping materials. As is well known, considerable losses in agricultural output occur as a result of shortcomings in planning (lack of balance between output production volumes and material resources and so forth) and organizing agricultural production itself, discrepancies in the work of this branch and in the procurement and processing enterprises and organizations and poor economic interrelationships among branches of the APK.

In addition to measures aimed at strengthening the logistical base, the May (1982) Plenum of the CPSU Central Committee outlined a whole series of measures for improving the administration, planning and organization of labor and raising the production efficiency of the agroindustrial complex to the maximum possible degree. During the November (1982) and subsequent plenums, a great amount of attention was devoted to raising personnel responsibility and discipline and to eliminating inter-branch and intra-branch disproportions in the development of the APK branches.

The carrying out of those tasks associated with increasing the production of agricultural products and ensuring that they are protected properly is dependent to a considerably degree upon solutions being found for the above tasks. Thus, during the May (1982) Plenum the task was assigned of developing and implementing in each rayon, each oblast and in each union republic an efficient system of

measures for combating losses and ensuring uninterrupted operations by the procurement, transport and trade organizations. The implementation of this task began in 1982-1983.

The initial operational results in carrying out the country's Food Program indicate that the measures aimed at accelerating the development of the agroindustrial complex are being implemented in a consistent manner.

Positive progress is being achieved in the production of agricultural and food products. In 1983, 133.8 billion rubles worth of gross agricultural output was obtained -- 5 percent more than the previous year. Increases took place in the gross yields of grain, sugar beets, potatoes, fruit, berries, vegetables and melon crops. Milk production increased by 6 percent, meat -- by 4 and eggs -- by 3 percent. The procurement plans for livestock, poultry, milk, eggs, wool, potatoes, vegetables and a number of other types of products were all fulfilled. The grain procurement volumes increased and the plans for grain sales were fulfilled by many republics, krais and oblasts. The animal husbandry feed base was strengthened. Seven percent more feed was procured than the total for 1982 and the quality of the feed was raised.

In the food branches, increases were noted in the production of granulated sugar from beets, plant and animal oil from raw materials of the state resources and in meat, whole milk and other products. Moreover, a substantial increase in output was obtained as a result of measures carried out aimed at reducing product losses. During the 1981-1983 period, storehouses for the storage of 3.7 million tons of potatoes, vegetables and fruit were placed in operation at APK branches and this made it possible to ensure a good supply of these products for the farms and enterprises and it also ensured better protection for the products. The construction of intra-farm hard surface roads was carried out at a high tempo. The plan for placing them in operation during a period of 3 years was fulfilled by 113 percent. USSR Minplodoovoshchkhov /Ministry of the Fruit and Vegetable Industry/, jointly with the Ministry of Railways, carried out work aimed at accelerating fruit and vegetable deliveries to the consumption areas. An increase took place in the volume of goods transported over special routes and this is making it possible to shorten the delivery schedules by 2-3 days and to decrease product losses by 10-15 percent. In 1983, in both Omsk Oblast and Krasnoyarsk Kray, improvements in organization and procurements, the introduction of progressive vegetable storage technologies and other measures served to reduce losses in these products by almost twofold compared to 1982.

In Omsk Oblast alone, the sale of vegetables according to the market fund increased by 5,000 tons. At the Konotop (Sumy Oblast), Sevastopol (Crimean Oblast) and Pervomaysk (Nikolayev Oblast) wholesale-retail fruit and vegetable combines, the product losses last year were reduced by a factor of 3 as a result of the introduction of container shipments, progressive vegetable storage technologies, waste-free technologies, the accelerated construction of storehouses and so forth.

However, many measures directed towards ensuring proper protection for the agricultural products are not being carried out fully. In the annual plans the construction volumes for these installations are lower than those called for in the five-year plan. During the 1981-1983 period the placing in operation

of storehouse capacities was reduced in the annual plans by 330,000 tons of one-time storage and in 1984 -- by 240,000 tons. Yet even these reduced plans are not being carried out.

In 1983 there were 12 percent fewer fruit, vegetable and potato storehouses placed in operation than the number called for in the annual plan. At sovkhoses the overall volume of storehouse capacity which was not placed in operation amounted to approximately 158,000 tons (7 percent) and at kolkhozes -- 346,000 tons (approximately 23 percent). In 1981-1983 the five-year plan for placing fruit and vegetable storehouses in operation was fulfilled by 82 percent, haylage and silage installations -- by 93 and grain storage elevators -- by 85 percent. The lower organs do not devote proper attention to these lower limit installations. Their construction is not controlled in an adequate manner, the responsibility of the contractual organizations is low and USSR Gosstroy and USSR Minplodoovoshchkhov are not carrying out their tasks concerned with organizing completely prefabricated storehouses for potatoes, vegetables and fruit, made out of light metal structures of plant manufacture.

The tasks for placing refrigerators in operation in APK branches have not been fulfilled adequately. At the same time, serious shortcomings are being noted in the operation of existing refrigeration units. As a result of departmental isolation and other factors, the percentage of use of refrigeration units by USSR Minplodoovoshchkhov during the busiest harvest month of 1982 was 86, USSR Mintorg /Ministry of Trade/ -- 64, Tsentrosoyuz -- 73, USSR Minpishcheprom /Ministry of the Food Industry/ -- 66, USSR Minsel'khov /Ministry of Agriculture/ -- 72 and other ministries and departments -- 46 percent. Nor is sufficient use being made of storehouses for fruit and vegetable products.

The decree of the CPSU Central Committee and USSR Council of Ministers entitled "Measures for Reducing Losses in Agricultural Products" called for the appropriate ministries and departments to develop a general plan for the disposition of fruit and vegetable storehouses, fruit storehouses and enterprises for the processing of agricultural output, taking into account the complete utilization of existing production capabilities and also the need for supplying the population with potatoes, vegetables and fruit. This work has been completed for the most part, with the plan calling for the processing enterprises to be located close to the raw material zones. This will make it possible to reduce the number of inefficient shipments as well as product losses.

The ability to protect the agricultural products and the products obtained from their processing is dependent to a considerable degree upon the development of the packaging economy and improving its technical level. In recent years, more packaging materials have been produced, more extensive use is being made of the materials on a repetitive basis and greater use is also being made of container shipments. However, by no means are the APK branch requirements for packaging materials being satisfied fully and this is resulting in untimely deliveries of the products, a reduction in their quality and in spoilage. The problems concerned with planning the production and deliveries of packaging materials require additional work.

With regard to providing reliable protection for the products, an important role must be played by the new organs of administration -- agroindustrial

associations and particularly RAPO's /rayon agroindustrial associations/. One of the most important tasks of these organs -- ensuring a proper balance in the development of the enterprises and organizations belonging to a RAPO; eliminating the existing disproportions in the production, procurements, shipments, storage and processing of products. With the creation of the agroindustrial associations, favorable opportunities have appeared for concentrating the material and financial resources on the principal goals. In addition, real opportunities have appeared in each rayon of an oblast for the purposeful and mutually related development of the entire APK within the framework of a single plan.

The operational results of the agroindustrial associations reveal that many of them are directing their efforts towards achieving coordinated operations among all participants in the associations, in the interest of developing agricultural production, protecting the products and improving the organizational and economic relationships of the kolkhozes and sovkhozes with the service and procurement enterprises and organizations.

Thus, in accordance with a decision handed down by the Yershovskiy RAPO in Saratov Oblast, the centralized fund is to be used for expanding the capabilities of a meat combine, as a result of which the losses usually sustained during cattle deliveries for processing will be eliminated. In accordance with a decision handed down by the Belgorod Oblast agroindustrial association, eight additional beet procurement points have been organized this year and this is resulting in a reduction in sugar beet losses.

Last year however, a lack of coordination was noted in some rayons between the periods for commencing the sugar beet harvest and the commencement of work by the sugar plants and this resulted in considerable beet losses out on the kolkhoz and sovkhoz fields and also at the sugar plants. During the grain crop harvesting period in a number of rayons, there was a shortage of drying capabilities for damp grain at the kolkhozes and sovkhozes, while at the same time the drying economy of the USSR Minzag /Ministry of Procurements/ was not being employed to full capability.

The losses in cattle weight are still considerable owing to a lack of coordination in the work being carried out by the suppliers and procurement specialists and also because of the disparity between the volumes of livestock and poultry purchases and the processing capabilities. A shortage in capabilities results in losses in meat when the livestock are held too long during the peak procurement periods and also during their shipments to other regions of the country. Thus the state purchases of livestock and poultry and their acceptance for processing involve a high level of seasonal work.

The reserves available for lowering losses -- improving the normative base, making the norms for the consumption of raw materials more rigid, lowering the norms for natural losses. More raw materials are expended in our country per unit of final product than is the case in other countries. Many of the norms for natural losses were approved long ago and have not been reviewed, despite the fact that the technology has undergone considerable changes. Different norms for natural losses can be found for the same products and storage conditions. Thus, for the bulk storage of rye and wheat grain, the norm for

natural losses for a period of up to 6 months for USSR Minzag is 0.09 percent and for sovkhozes -- 0.12 percent; for a period of up to 1 year the figures are 0.12 and 0.18 percent respectively.

Obviously the norms for grain losses, established by the agrotechnical requirements for combines in the amount of 2.5 percent, should be reexamined. The ministries and departments have carried out a certain amount of work in connection with reviewing the norms for natural losses and yet scientifically sound norms are being developed very slowly.

Deserving of attention is the recommendation by scientists calling for the establishment in the state plans for economic and social development of tasks for the ministries and departments aimed at lowering the consumption of agricultural raw materials and losses in agricultural products, as is now being done in the case of fuel, electric power, rolled ferrous and non-ferrous metals, cement and a number of other resources.

It is our opinion that this should ideally be done in the section of the plan entitled "Agroindustrial Complex" by including in it a subsection entitled "Task for Reducing Losses in Agricultural Products and in the Products Obtained From Their Processing." This subsection can include tasks for introducing scientific-technical achievements into production operations that will serve to reduce losses. It also appears feasible to call for a portion of the additional output obtained as a result of the implementation of these measures to be used for the creation of reserves and to allow farms, enterprises and associations to use them for satisfying more completely the requirements of the local population.

An analysis of the reasons for losses in agricultural products and the implementation of measures aimed at reducing them are closely associated with improving the statistics on losses. At the present time, natural losses, losses during storage and the spoilage of products are all being taken into account in the annual reports of kolkhozes and sovkhozes. But these losses constitute only a negligible portion of the overall amount of losses. During the 1976-1980 period, for example, the average annual natural losses in grain at sovkhozes amounted to 0.11 percent and at kolkhozes -- 0.31 percent of the gross yield, for sunflower seed the figures were 0.25 and 20 percent respectively, vegetables -- 0.56 and 0.73 percent and for melon food crops -- 0.24 and 0.53 percent.

Data is also available in the annual reports on the consumption of vegetables, melon crops and fruit and berries fed to livestock and also on animal losses by death and plague. However, a large portion of the losses and the reasons for them are still not being reflected in any type of accounting.

At the present time, the USSR TsSU [Central Statistical Administration] and the USSR Minsel'khoz [Ministry of Agriculture] have developed and approved scientifically sound methods for accounting for losses in agricultural products. These methods provide a clear definition of the concept of losses in agricultural products and they call for a stipulation in each instance stating that the losses in grain, sugar beets, vegetables, melon crops, fruit, livestock and feed, which were produced but not yet delivered to the consumer,

took place during the harvesting, preparation, storage, transporting, processing or sale of the products. These same documents recommend that the overall volume of losses be reflected in the accounting documents in a separate line entitled "Including losses within the norms for natural losses."

The organs of people's control must intensify their control over the carrying out of those measures aimed at ensuring proper protection for the agricultural products during all stages in their production, transporting, storage and delivery to the consumer. Here a great role will be played by the labor collectives in summarizing the results of the socialist competition.

As is known, an all-union public review of the effectiveness of use of raw materials and fuel and energy resources is being conducted at the present time in the interest of motivating workers to participate in the campaign to achieve economies and thrift and to fulfill and overfulfill successfully the tasks of the 11th Five-Year Plan. Each year the participants in the review submit more than 4 million proposals, the implementation of which is making it possible to save billions of rubles. A requirement exists for ensuring that this review reflects on a more extensive scale those problems concerned with the protection of agricultural products.

The implementation of the organizational-economic measures aimed at reducing losses in agricultural products in the APK branches will make it possible to augment the food product resources substantially and to improve the supply of these products for the country's population.

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CSO: 1824/639

AGRICULTURAL MACHINERY AND EQUIPMENT

DEVELOPMENT OF AGRICULTURAL EQUIPMENT MAINTENANCE IN RSFSR

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 6, Jun 84 pp 2-4

[Article by N. Polyakov, deputy chairman of Goskomsel'khoztekhnika RSFSR (State Committee for the Supply of Production Equipment for Agriculture RSFSR): "Developing Equipment Service"]

[Text] Increasing the returns from capital investment, a growth in the productivity of agriculture and improvement of the relations between the branches of the agro-industrial complex--these are key objectives put forth by the Food Program of the country.

I would hardly be mistaken saying that their attainment must be accompanied by an acceleration of technical progress in agriculture, an active search for the most efficient forms of using the machine and tractor fleet, and improvement of the organization of repair and maintenance of machinery. And in this important matter, a serious role is assigned to Goskomsel'khoztekhnika.

Today the Goskomsel'khoztekhnika RSFSR possesses a sufficiently developed material base, capable of satisfying the needs of kolkhozes and sovkhoses for production machinery supply. The capacity of repair enterprises and specialized equipment maintenance stations can handle nearly 1.7 million repair jobs. In 1983 the repair enterprises of the Goskomsel'khoztekhnika RSFSR repaired 456,500 tractors, 122,900 grain combines, 230,000 motor vehicles and 1,165,000 tractor, combine and motor vehicle engines.

In accordance with the requirements of the May (1982) Plenum of the CPSU Central Committee, cooperation is successfully developing between kolkhoz and sovkhos repair shops and Selkhoztekhnika. Last year 113,000 units and assemblies for tractors, 23,400 for motor vehicles, and 36,300 units and assemblies for agricultural machines were repaired (in terms of complete machines) for farm repair enterprises which basically perform routine maintenance of machines. To make up for the shortage of spare parts, worn out parts were reconditioned in the amount of 270 million rubles, or 26 percent of the total consumption of new spare parts in agriculture.

The experience of recent years shows that the organization of efficient mutual relations between enterprises and Sel'khoztekhnika makes it possible to reduce the time required for preparing equipment for work in the fields by so much

that even harvesting machinery is placed on the ready line in time for the beginning of spring field work. In 1983 the readiness of equipment by 1 March in the kolkhozes and sovkhoses of the Russian Federation was 87 percent for tractors, grain harvesting combines--72, tractor plows--98, and seeders by 98 percent.

A great deal of the activity of Goskomsel'khoztekhnika enterprises is related to mechanization of labor on the farms. Installation organizations perform up to 90 percent of the assembly and installation of equipment for livestock raising. Equipment maintenance stations have taken on the responsibility for caring for dairy equipment and feeding and manure removal machinery. And the total volume of work performed for kolkhozes and sovkhoses in 1983 was in the amount of 4.6 million rubles.

Not so long ago the CPSU Central Committee and the USSR Council of Ministers issued the decree "On improving the economic mutual relations of agriculture with other sectors of the national economy." The rayon Sel'khoztekhnika associations were given the full responsibility for the readiness and working condition of the machine and tractor fleet, and duplicated elements in the management structure at the rayon level were eliminated. And today there already are grounds for saying that in a number of oblasts, krays and autonomous republics of Russia, engineers and technicians of kolkhozes, sovkhoses and Ray-sel'khoztekhnika associations have achieved a united approach to the organization of repair and maintenance of equipment, and to improving its operation and upkeep. In many rayons the process of specialization and concentration of repair work and maintenance of machinery in shops at kolkhozes, sovkhoses and in Selkhoztekhnika enterprises has been accelerated. The proper conditions are being created for for more efficient utilization of capital investments and capacities of repair and maintenance enterprises, and the work load is being redistributed among the shops of the rayon depending on their technological orientation.

Goskomsel'khoztekhnika enterprises on the rayon level everywhere have become members of RAPO [rayon agro-industrial associations]. Managers of rayon Sel'khoztekhnika associations have been elected RAPO council deputy chairmen for mechanization and electrification of agricultural production and material and technical supply.

The Goskomsel'khoztekhnika of the Tatar ASSR is operating successfully within the agro-industrial complex. Its enterprises and organizations have directed their efforts toward strengthening the material and technical base of kolkhozes and sovkhoses. Using waste from enterprises and local materials, industrial production of light structural elements for the construction module "Tatariya" has been organized. Using these structures and the resources of Sel'khoztekhnika, maintenance stations, insulated garages, covered threshing installations and feed centers are being assembled at enterprises.

The repair and maintenance of oil storage equipment, which is used by nearly all the kolkhozes and sovkhoses, are well organized in the Tatar ASSR. The Sel'khoztekhnika brigades service 708 petroleum product storage stations with 2,277 fuel pumps and 5,528 storage tanks. Oil storage facilities have been built or reconstructed at 92 enterprises.

These and other measures made it possible to save more than six percent of diesel fuel in comparison with the norm for the work performed.

A planned preventive maintenance system for the machine and tractor fleet is being introduced everywhere, and equipment at livestock raising farms and complexes has been almost completely covered for maintenance.

The operating experience of the Goskomsel'khoztekhnika of the Tatar ASSR as a part of an agro-industrial association was approved by the agro-industrial commission of the RSFSR Council of Ministers.

In implementing the functions of supervising a unified engineering service in the RAPO, many raysel'khoztekhnika associations jointly with enterprises are taking measures to reconstruct and reequip the repair and service base and machinery pools in the kolkhozes and sovkhozes, and to improve the techniques for repairing equipment at enterprises.

With the participation of the agricultural administration and scientific research institutes, Raysel'khoztekhnika of Kanevskiy Rayon in Krasnodar Kray performed an analysis of the work load of the rayon repair enterprises, and prepared proposals for compiling a general plan for the development of repair facilities.

An "Engineer's day" is held weekly at this raysel'khoztekhnika association at which the condition of the machinery and tractor fleet is analyzed jointly with the chief engineers of kolkhozes and sovkhozes, and measures to eliminate shortcomings are developed.

Painstaking organizational work made it possible to raise the prestige of raysel'khoztekhnika associations among machinery operators. An ever increasing number of enterprises are now turning over their mechanization equipment to them for service.

Over a period of two years the volume of tractor maintenance work performed by the Kanevskiy Raysel'khoztekhnika association grew by a factor of 2.4, and high-powered tractors have been turned over for maintenance completely.

The system of awarding bonuses to collectives engaged in maintenance work is dependent on the results, on ensuring the readiness of equipment and the quality of work performed. The master mechanics and fitters receive up to 25 percent bonus for meeting the contractual agreements for completion of repair of machinery in a permanently assigned brigade, and up to 10 percent for fulfilling the norm for maintenance between repairs.

This made it possible to raise the level of technical readiness of tractors to 94-96 percent of the fleet during the periods of intensive work, and of grain harvesting combines to 99-100 percent. The daily output coverage of combines in threshing operations rose from 6.4 hectares in 1981 to 8.4 in 1983.

According to a decision of the RAPO in Kanevskiy Rayon, a system has now been introduced for machinery and equipment maintenance on livestock raising farms

by teams permanently assigned to each enterprise. Raysel'khoztekhnika payments for work performed are made in accordance to established limits. The sums saved against the limits are evenly divided between the enterprises and Raysel'khoztekhnika.

A new form of material incentives is also provided for workers in this service: a bonus of 15 percent of salary is paid for reliable performance of the machines, also 15 percent for meeting the plan for production of livestock products, and 5 percent for product quality.

By now the enterprises of Kanevskiy Rayon have turned over 90 percent of their equipment to Sel'khoztekhnika for servicing. According to calculations this made it possible for the kolkhozes and sovkhoses to save 23,000 rubles on repairs and maintenance of farm equipment in 1983 in comparison to 1981.

Centralized management of transporting grain and other agricultural products during the harvest period was used last year, which made it possible to significantly reduce the requirements in motor vehicles and reduced product losses.

Unfortunately, the rayon Sel'khoztekhnika associations have not yet been able to restructure their activities everywhere. The mechanism for mutual account payments for work performed has not yet been completely perfected. In a number of places the quality of repair work leaves much to be desired. In some places it is thought that improvement of economic relations of enterprises and Sel'khoztekhnika is of concern to economists alone. Experience shows that without exception this is the task of all services of Goskomsel'khoztekhnika, agricultural organs, kolkhozes and sovkhoses. Only initiative and a well-founded economic approach permit finding rational resolution of complex issues. The performance of Yaroslavskoye Raysel'khoztekhnika association in Yaroslavl Oblast is confirmation of this.

Yaroslavskiy Rayon is one of the largest agricultural rayons in Yaroslavl Oblast. Twenty-one agricultural enterprises are located on its territory, including two kolkhozes and 17 sovkhoses, with an assigned total of 90,000 hectares of agricultural lands. In recent years the equipment level of enterprises of the rayon has grown, the value of machinery and equipment increased by 4.5 million rubles, reaching 24.7 million in 1982. The power availability reached 326,700 hp, and power availability per farm worker in 1982 was 39 hp compared with 23.9 hp in 1975.

At the present time the kolkhozes, sovkhoses and experimental demonstration farms of the rayon possess 1,500 tractors of all makes. The enterprises have 190 grain harvesting combines, 290 combines for feed production and over 2,700 units of agricultural equipment. The repair and maintenance facilities include 20 standard and 15 adapted repair shops, 12 standard and 19 adapted maintenance stations, and 10 covered areas for storage of agricultural machinery. The average annual number of workers at the enterprises is 8,300. During the periods of agricultural work the kolkhozes and sovkhoses basically make do with their own work force.

The organized production equipment capacities of Yaroslavl Raysel'khoztekhnika association even now permit a volume of work to be performed for the kolkhozes

and sovkhozes in an amount exceeding 9 million rubles, of which 1.8 million is for maintenance of mechanization and electrification facilities.

The Raysel'khoztekhnika association operates in the facilities of kolkhozes and sovkhozes. All enterprises of the rayon have organized maintenance of high powered tractors, irrigation equipment, equipment at petroleum products storage facilities, machinery and mechanisms at livestock raising farms and complexes, and of other equipment. Requests by kolkhozes and sovkhozes for overhaul of the tractor fleet and engines and attachments for it are fully satisfied. A specialized shop annually repairs 700 tractor-combine engines for the enterprises. In accordance with schedules approved by the RAPO council, overhauled units and attachments for agricultural machinery are delivered through exchange stations to the enterprises on a contract basis. All equipment sent to the farms is delivered in an assembled condition.

By means of diagnostic practices additional reserves were found last year in usable safe engine life in the tractor fleet in an amount of 175,000 engine-hours of operation, which is equivalent to an addition of 130 tractors to the work force without repair. The rapid supply and delivery brigade furnishing equipment to the kolkhozes and sovkhozes released about 100 expeditors, loaders and motor vehicle drivers from work at the farms. The restructuring of production and technical interrelations made it possible to attain a saving of over 30,000 rubles.

With the aim of saving fuel and lubricating materials, a section was organized at the Raysel'khoztekhnika association for repair and maintenance of equipment at petroleum products storage facilities. A brigade of 10 workers was organized for work directly at the farms for maintenance of fuel service pumps and for cleaning, washing and sealing of fuel tanks.

In 1983 alone various attachments valued at more than 20,000 rubles were fabricated on order for the kolkhozes and sovkhozes. An attachment for additional soil cultivation with a potato harvesting combine increased its productivity by 30 percent. The building of 7 loaders for grain sowing machines permitted the release of 20 workers on the farm and a saving of more than 1,000 man-hours. Five thousand catches were fabricated for hay-harvesting rakes, completely satisfying the needs of the enterprises.

In 1983 the livestock raising equipment maintenance service concentrated its efforts on improving the quality of servicing the mechanization equipment for livestock raising. A brigade form of labor organization was installed for this purpose. Seventy-eight people work in this brigade, qualified personnel has been trained, and an exchange stock of units and machines has been established.

The engineering services of Raysel'khoztekhnika and the enterprises began working according to joint plans approved by the RAPO council. At specified times the manager of Raysel'khoztekhnika reports to the RAPO council on the fulfillment of plans for equipment preparation for field work, repair and maintenance of all machinery and gear, on the condition of equipment at petroleum products storage facilities, preparation of livestock holding facilities for the wintering of cattle, and the utilization and development of the repair and service base of the enterprises.

In accordance with a decision of RAPO, a school of advanced practices is functioning at the Raysel'khoztekhnika association where the mechanisms of new machines are studied. A club of machine operators-innovators is functioning where the participants exchange their work experience.

Many examples of business-like cooperation between farms and Raysel'khoztekhnika associations can be found in the Chuvash ASSR and Stavropol Kray, in Chelyabinsk, Tula, Kaliningrad, Penza and Smolensk oblasts. Accomplishing specific production tasks related to ensuring constant readiness of equipment, the rayon associations strive for further development of the mechanization of agricultural production and a more complete utilization of the technical potential of rural areas.

However, much still remains to be done for the unity of rural engineering services and elimination of shortfalls in the utilization of existing reserves. Serious criticism continues to arrive from the kolkhozes and sovkhoses about the quality of repair work, equipment idle time due to these causes, and additional expenditures of labor and funds. There are still many cases when maintenance of equipment is not comprehensive, especially on farms, and when fixing of breakdowns and defects replaces periodic maintenance care. Many Raysel'khoztekhnika associations and other enterprises of the committee continue their economic practices in the old ways, without grasping the everyday needs of the kolkhozes and sovkhoses. This in turn puts the farm enterprises on guard, leading to their distrust of Sel'khoztekhnika.

Business-like cooperation with the enterprises, raising the level of production and economic discipline--these are the reference points toward which all enterprises and organizations of Goskomsel'khoztekhnika must set their course today. Only with this condition can one count on success in attaining the goals set by the party.

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CSO:1824/602

AGRICULTURAL MACHINERY AND EQUIPMENT

AGRICULTURAL EQUIPMENT PROBLEMS IN THE UKRAINE

Moscow PRAVDA in Russian 25 Jun 84 pp 1-2

[Article by PRAVDA correspondent I. Lakhno: Kharkov, Poltava and Sumy oblasts: "Is Equipment Always Reliable?"]

[Text] The 84 harvest: with all elements of the complex. The farm workers of Kharkov, Poltava and Sumy oblasts have over five million hectares of arable land available to them. The farms possess various equipment for the growing of grain, feed crops, beets, sunflowers, potatoes and other crops. Each year thousands of machines are added to their fleet. The fate of the harvest depends to a great degree on their reliable and highly productive performance.

Just before the harvest the machinery operators of Bogodukhovskiy Rayon were informed that Niva and Kolos combines had arrived at the kolkhozes. There was still time to ready the units for work.

"I don't envy those lucky ones receiving the combines," remarked A. Nochevka skeptically. "When a machine is tested in operation, you feel more assured."

Aleksandr Nikolayevich had no luck with the new Kolos. The kolkhoz imeni Tel'man also received it not long before the start of the harvest. It took the operator one month to put the unit into working condition. He was late for the harvest. As the result, the high-output combine caused A. Nochevka grief, and losses to the kolkhoz.

Not only the machinery operators at the kolkhoz imeni Tel'man are complaining about the fact that equipment arrives with defects. Their elimination requires much in time and funds. At times the so-called finishing assembly turns into repairs.

It is good if the machinery is purchased in good time. But the machinists are afraid to receive "the spoon just in time for dinner." And not without cause. For example, the farms of Karlovskiy Rayon in Poltava Oblast received six Niva combines before the last harvest. While they were adjusting them--the harvest ended.

Why is it that the machinery operator, having received a new machine, cannot immediately join in the work, but spends a long time eliminating defects? Is this his responsibility? Certainly not. After all, Selkhoztekhnika [Agricultural Equipment Association] sells the units to the farms with a hefty mark-up for services. But can these be called services if the combine is sold to the kolkhoz in an inoperable condition?

Last year the rayon Selkhoztekhnika associations began to organize subdivisions for warranty services. They must provide for finishing assembly, adjustment and breaking in of the machines, revealing and eliminating manufacturing defects. In a word, sell ready for work machines to the enterprises.

"The maintenance service is practically ready," says Ye. Monakh, chairman of Kharkov Oblast Selkhoztekhnika. "Specialists have been selected. But stations for finishing assembly and adjustment are needed, stands for breaking in, and instruments for adjustments of assemblies. So far only six rayon associations have them."

Before, many mechanisms such as plows, cultivators, and stubble breakers were delivered by the plants in assembled form. Now--all in pieces. This way it is easier to transport by railroad. But... the quality of the products has dropped significantly. Incompleteness of the assemblies has almost become the norm. The suppliers have refused to ship the machines one at a time. They shifted to the so-called package method. Or more correctly, to railcars.

To what did this lead? For example, the Odessapochvomash [Odessa Soil Machinery Enterprise] sent the city of Kupyansk in Kharkov Oblast a railcar of plows--disassembled. Try to make sense of which of them are in a complete set form, and which have something missing. The maintenance service needed not days but weeks to assemble the soil cultivation implements. At the same time, the machinery operators needed them now. They were told: take them, they said, in this condition, or we'll give them to someone else. What to do? They were forced to take them.

The workers of the Kharkov Oblast Selkhoztekhnika association cannot be faulted for lacking a desire to improve service in rural areas. They designed and built 120 mobile stands. They are used for adjustment and breaking in of the sowing machines. An engineer and a fitter bring the stand to a farm and test the assemblies on the spot. This made it possible to improve the quality of planting grain and other crops.

Much agitation was suffered by machine operators at the kolkhoz imeni Lenin in Dvurechanskiy Rayon: the harvest is not so far off, but the promised combines were late in coming. When the Niva combines arrived from the Kupyansk Selkhoztekhnika association, the combine drivers were much relieved. The machines turned out to be thoroughly checked out and broken in--into the field tomorrow, if you like.

The warranty stations in Lozovskiy, Volchanskiy and Krasnokutskiy rayon associations in Kharkov Oblast are assiduously preparing the new machines, as well as in Dikan'skiy, Karlovskiy and Lubenskiy associations in Poltava Oblast and

in Akhtyrskiy and Belopol'skiy in Sumy Oblast. As a rule they sell not only minor implements to the kolkhozes in working order, but complex units as well. This year many checked-out grain combines have already been sent to the villages.

That kind of help is to the liking of the machinery operators. But the workers of the reliability service still hear many complaints. For example, at the Chervonoarmeyets kolkhoz in Balakleyskiy Rayon the gearbox of a new T-150K tractor suddenly failed. Turned out to be a manufacturing defect. Another box was brought after 35 days. The machine idle time cost the enterprise a loss of 2,773 rubles. Selkhoztekhnika and the KhTZ [Kharkov Tractor Plant] refused to compensate the kolkhoz for the loss suffered. Here is where an intervention by the oblast agro-industrial association would be proper. But it paid no attention to the conflict. At the same time it is precisely Selkhoztekhnika jointly with the supplier plants that should compile exchange stocks of assemblies and parts for machines in warranty. But there still are no such stocks.

Situations such as this one are most often not resolved in favor of the kolkhoz or sovkhoz. The enterprise managers do not venture to resolve controversial issues by resorting to the courts: too much trouble, and it is still not certain what could be gained by arguing. But relations with Selkhoztekhnika would be spoiled. In their turn, those workers do not wish any conflicts with the supplier plants. As the result the farms suffer and the harvest suffers.

"And how they suffer," complains M. Onatsko, chairman of the Karlovskiy RAPO council. "Here is an example. A shipment of cultivators arrived at Grebenka Station addressed to the local Rayselkhoztekhnika association. These machines were urgently needed by the beet growers. But ten days passed while they were completing the paperwork and before the units were shipped in and assembled. The best time for cultivating the plantings was missed.

Long delivery time for machinery is one of the costs of the so-called package equipment delivery method. Let us say that kolkhozes send trucks from Karlovka all the way across Poltava Oblast to Grebenka to pick up cultivators, and after some time, the Grebenka enterprises send to Karlovka for the same machines. It is convenient for the plants, the railroad and to Selkhoztekhnika. It is inconvenient and expensive for their partner--the kolkhoz.

"It is expensive to us too," remarks N. Filippov, manager of the Bogodukhovskiy Rayselkhoztekhnika association. "We receive machines from 12 other associations in Kharkov Oblast for the farm enterprises in our rayon."

But even this is not all. The 12 associations supplying new machinery for the farms in Bogodukhovskiy and other rayons are responsible for its finishing assembly, adjustment and break-in. Selkhoztekhnika workers in other rayons are responsible for reliable performance of machinery during the warranty period. In case of failure of a machine it is practically impossible to find the guilty party. Most likely the rural machinery operator will turn out to be it.

Incidentally, the planning organs too contribute to the fact that Goskomselkhoztekhnika enterprises find it more advantageous to repair kolkhoz machines

than to organize their effective maintenance in the fields. The output is planned for them just like for any plant. The planning is not done with consideration of actual rural needs, but on the basis of what has been achieved, with an annual increment. And this is what forces the maintenance service to resort to subterfuge, diagnosing "to overhaul" for tractors and other machines which are still in good working order. Probably no one would attempt to calculate the losses from expenditures for premature equipment repair.

I inquire what moral and material incentives inspire the reliability service to function more reliably.

"But none," answers N. Zheleznyak, manager of this service at Volchanskiy Ray-selkhoztekhnika. "We get our fixed wages and that is all."

Indeed, how, and from what funds can incentives be paid for conscientious maintenance of equipment during the warranty period? To relate this to the end result is too far removed for the maintenance workers. Very many other factors influence the formation of the harvest, and it would hardly be possible to take into account with accuracy the contribution of the reliability service. In the opinion of N. Zheleznyak and other Selkhoztekhnika workers, their labor should be evaluated on the basis of trouble-free performance of the serviced machinery during the warranty period.

The machinery operators should also not be relieved of responsibility for the maintenance of machinery. The wrong oil poured into the engine, not changed it in time, overheated the engine, applied excessive load--and it is not far to a breakdown. In Bogodukhovskiy, Krasnokutskiy and Pervomayskiy rayons of Kharkov Oblast new equipment is entrusted to the best master operators, and even then after their substantial retraining and practice. The same is done at many farms in Poltava and Sumy oblasts.

The qualifications of machine operators and their working practices have grown a great deal in recent years. However, it is too early to consider all problems resolved. There are especially many of them in the area of equipment storage. In Balakleyskiy, Volchanskiy and Dergachevskiy rayons the annual work output for self-propelled machinery is lower than the Kharkov Oblast average. Idle time and premature wearing out of many machines are explained by the fact that they are stored in the open, without adhering to the simplest rules of conservation. Beet and corn sowing machines, for example, are used 4-8 days per year. If they were immediately cleaned of dirt, lubricated and placed indoors, the units would perform properly for tens of years. But they are written off as early as the seventh or eighth year.

The farm workers are waiting for the time when more improved machines will arrive to replace the obsolete and inefficient ones.

"The automatic beet crop thinner is a good one," says Hero of Socialist Labor N. Lavrik from the Komintern kolkhoz in Nedrigaylovskiy Rayon, who is a machine operator well-known in Sumy Oblast. "But it cultivates six rows in one pass. We have heard that a 12-row unit has been developed. When will it appear in the planted areas?"

I address this question to Yu. Kovtun, chief of the department of new equipment testing at the Ukrainian Institute of Agricultural Machine Building.

"Work is continuing," he answered. "We want to teach the electronic 'eyes' of a machine to distinguish plants by color. The task is a difficult one, but I hope we'll manage to do it."

The beet growers are also tired of waiting for other wide-swath machines. For now the most important objective of the machine operators is to use available equipment with the highest productivity. Their partners, the collectives of tractor and agricultural machine building plants and Selkhoztekhnika are called upon to render them all possible assistance. Only by joint, coordinated efforts is it possible to achieve effective utilization of the scientific and technical potential that has been created in rural areas, and bring in the harvest ripening in the fields on time and without losses.

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CSO: 1824/602

AGRICULTURAL MACHINERY AND EQUIPMENT

AGRICULTURAL EQUIPMENT MAINTENANCE EMPHASIZED

Moscow SEL'SKAYA ZHIZN' in Russian 31 Jul 84 p 1

[Text] One of the most important conditions for highly productive utilization of machines in the harvest is their high level of readiness and reliability in operation. The experience of the leading machinery operators is convincing that they owe their successes primarily to the reliable performance of the equipment entrusted them. Much depends here on the skills of the operator himself, his level of knowledge and his attitude toward the entrusted task. After all, an experienced combine operator will not go into the fields without checking all elements of his machine and determining their degree of reliability.

Gone with the past are the days when each individual combine operator was left on his own, performing maintenance and repairing breakdowns with his own resources. With the shift to large-group use of machines in teams, detachments and complexes, care for maintenance and prevention of failures was assumed by specialized subdivisions headed by repair foremen. At their disposal is a large arsenal of various means for performing repair and maintenance operations, beginning with mobile repair shops and ending with precise diagnostic instruments.

During this harvest campaign about 110,000 repair foremen, welders, fitter drivers, fitter electricians, driver refuelers and workers in other professions are engaged in the country as a whole in maintenance and repair of harvest equipment. The majority of these are experienced machinery operators with a broad range of skills who have previously worked with various machines, who know machinery well and love it, and who perform the task entrusted them with a full measure of responsibility. The kolkhozes and sovkhoses alone allocate 37,000 mobile repair shops, 41,500 welding outfits and much other maintenance gear for the use of specialized teams.

A most important task of the agro-industrial engineering service is to make the most effective use of this enormous arsenal of equipment and the skills and energy of people. Wherever the maintenance of machinery is properly organized, the field conveyer moves uninterruptedly, the harvest and all work accompanying it are performed with the best times.

Among the leaders in the pace of harvest work and grain sales to the State in the Stavropol region today are the farm workers of Budennovskiy Rayon. The

tone in competition is set by the machinery operators of the kolkhoz imeni Parizhskaya Kommuna, who were the first to finish threshing. The collective of the second harvesting and transport complex worked especially well at this enterprise, where a high level of readiness of combines was maintained by the team led by veteran machinery operator P. D. Garbuzov. The team leader himself as well as master fitter G. A. Kapliyev, refueler I. Ya. Dmitriyenko, welder L. P. Khadzhiy and field repair metalworker V. I. Kolbasyuk were constantly alongside the combine operators, at night they performed maintenance, quickly fueled the machines and eliminated defects. The adjustment of thresher operation and cleaning of separators, of tension of chains and belts were under constant supervision, in a word, everything affecting threshing quality and preventing losses. This helped the combine operators to accelerate their work, permitting them to complete the harvest much sooner than in past years, and without losses. And the fact that the rayon as a whole is successfully meeting its commitments on grain sales is considerably to the credit of the maintenance workers.

Maintenance teams are performing with full efficiency in the Elektrosila kolkhoz in Vyselkovskiy Rayon and the Pobeda kolkhoz in Korenovskiy Rayon, Krasnodar Kray, as well as in the Urozhaynyy sovkhoz, Crimean Oblast. Enterprises and organizations of Goskomsel'khoztekhnika SSSR [State Committee for the Supply of Production Equipment for Agriculture USSR], which sent about 5,000 maintenance units and 14,000 mobile repair shops along with experienced specialists to the harvest, are actively participating in the complicated and painstaking work to maintain the readiness level of harvesting equipment.

In the overwhelming majority of rayon agricultural equipment associations the necessary stocks of spare parts and materials have been compiled, working duty shifts have been set up in shops and exchange stations, and dispatch communications are maintained with the kolkhozes and sovkhozes engaged in the harvest. In case of a breakdown of harvesting machines, prompt measures are taken to eliminate the defects. The machinery operators in kolkhozes and sovkhozes praise the quality of maintenance work at the harvest, performed by workers of the Baltasinskiy Rayon agricultural equipment association in the Tatar ASSR, Svatovskiy in Voroshilovgrad Oblast, and Bardinskiy in Azerbaijan, and by many other collectives of master fitters and repair workers. The efforts of the best master fitters, metalworkers and welders are distinguished by conscientiousness and a high level of professionalism, and by thorough performance of all operations required for planned maintenance and service work.

New regions of the country are continuously entering the harvest period. And the experience of the best farming enterprises in conducting exemplary harvest operations and organizing competent maintenance of harvesting equipment must be widely disseminated. Special attention of the engineering service should be drawn to such an important component of maintenance work as sheltered fueling of the machines, keeping the fuel systems of engines in good working order, and the performance of all necessary operations required for maintenance. All this in the final analysis helps to save fuel and lubricants and promotes highly productive performance of the machines.

But, as facts indicate, not everywhere is everything in order in the organization of this matter. At a number of farms in Vladimir, Ivanovo, Volgograd,

Pskov and Novgorod oblasts maintenance of tractors and combines is performed as a mere formality, with numerous violations of technical specifications. The managers and specialists of kolkhozes and sovkhoses failed to ensure the staffing of specialized teams with skilled master fitters and metalworkers, failed to provide mobile maintenance facilities. Many examples could also be cited of a wasteful attitude toward petroleum products. The engineering service of the agro-industrial complex, with the support of its partners, can and must root out these shortcomings and apply all efforts to organize efficient maintenance for the harvest.

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TILLING AND CROPPING TECHNOLOGY

CALL FOR GREATER ATTENTION TO DURUM, STRONG WHEAT IN RSFSR

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 7, Jul 84 pp 2-4

[Article by A. Osadchuk, chief, main agricultural administration of the RSFSR Ministry of Agriculture: "Special Attention to Durum and Strong Wheat"]

[Text] In determining the basic directions of work in agriculture for the current five-year plan, the 26th CPSU Congress named increased production and procurement of durum and strong varieties of wheat as one of the paramount goals. The Food Program places improvement of wheat grain quality in the same rank with increasing its production. The necessity to intensify the efforts of kolkhozes, sovkhoses and agricultural organs to increase the production of high quality grain of this crop was indicated by member of the Politburo and CPSU Central Committee Secretary comrade M. S. Gorbachev in his address to the all-Union economic conference on problems of the agro-industrial complex.

And this is understandable. Durum wheat is essentially the only source of the raw material for the production high-quality noodle products and several types of cereals. And the strong varieties of soft wheat must resolve the problem of using large quantities of grain which cannot be used without filler additives for production of flour suitable for baking high-quality bread.

The procurement plans for farming enterprises in many krais and oblasts of Russia determine the volume of sales of durum and strong wheat. However, far from everywhere are the State orders satisfied. In 1983 for example, only Volgograd, Kuybyshev and Saratov oblasts and the North Osetian ASSR fulfilled the plans for deliveries of strong wheat to the State stocks. Kolkhozes and sovkhoses in Orenburg and Rostov oblasts and in Altay Kray remained heavily in debt. The farm workers in Krasnodar and Stavropol' krais have relinquished their previous positions. The enterprises of Belgorod, Voronezh, Kursk, Lipetsk, Tambov and Penza oblasts are essentially not participating in deliveries of strong wheat.

An unfavorable situation has arisen in the production of durum wheat in their traditional growing zones--in Orenburg, Saratov, Volgograd and Chelyabinsk oblasts, and in the Bashkir and Altay regions.

This is explained first of all by poor planning discipline at the enterprises and a lack of proper control on the part of the agricultural organs. Eight

enterprises in Sakmarskiy Rayon, Orenburg Oblast which were given plans for delivery of durum wheat for 1983 failed to sow any. And the kolkhoz imeni Yu. A. Gagarin has not sown this crop for three years, although it was supposed to sell 2,000 tons to the State annually... Similar facts took place in Totalskiy, Belyayevskiy and Perevolotskiy rayons of the Orenburg region.

A plan for sales of 200,000 tons of durum wheat in 1983 was established for the kolkhozes and sovkhozes in Bashkir ASSR, that is, increased to double the amount compared with 1980. The sown areas during this period not only failed to increase, but were even reduced from 184,000 to 96,000 hectares, although the plan for sales was not met even in 1980.

From 1976 to 1983 the enterprises of Altay Kray reduced their plantings of durum wheat by 54,000 hectares, and as the result, their gross production last year was below the established procurement plan. Many enterprises in Burminskiy, Klyuchevskiy, Zav'yalovskiy, Biyskiy and Kalmanskiy rayons planted no durum wheat at all, although plans for its sales existed. Exactly the same was done in Kalachinskiy, Mar'yanovskiy and Cherlakskiy rayons in Omsk Oblast. And of 10 farm enterprises of Russko-Polyanskiy Rayon in this oblast which were issued plans for delivery of durum wheat, only two had planted any at all.

The Annenovskiy sovkhov in Ulyanovsk Oblast also failed to grow durum wheat, although it had been committed to doing so. In 1983 Ulyanovsk Oblast as a whole managed to fulfill only half of its sales plan.

Agricultural organs in Voronezh Oblast withdrew from regional planning and stopped planting all varieties of strong wheats, despite the fact that high volumes of sales of these varieties had been established for the kolkhozes and sovkhozes.

Many enterprises failed to store the needed quantities of seed grain of strong and durum wheat. A great shortage of durum wheat seed for this year's harvest developed in enterprises in the Bashkir ASSR, Altay Kray and Volgograd Oblast. This deficit had to be made up from State reserves.

In many zones of strong and durum wheat commodity production, the organization of efforts to grow and sell high-quality grain needs considerable improvement. It is well-known that selection of previous crops in the crop rotation system is of special importance. Many researchers point to this aspect of the matter. As Doctor of Agricultural Sciences P. Sudnov attests, the first data on the influence of predecessor crops on the albumen content of spring wheat were obtained in our country by V. Vlasov at the Poltava Experimental Station as far back as the turn of the century. The five year period average (1899-1903) content of raw protein in grain following spring wheat was 11.2 percent, after corn--14.82, mangel-wurzel--13.28, and after potatoes--13.28 percent. Data of contemporary research also confirm that the less desirable predecessors for wheat planting are cereal grains, and the most desirable are bare fallow lands, perennial grasses, leguminous plants as well as many intertilled crops.

In arid steppe conditions, bare fallow lands as a rule ensure the production of the highest quality grain. According to data from the grain technology

laboratory of the Siberian Scientific Research Institute of Agriculture, the following results were obtained with "Saratovskaya-29" spring wheat under production growing conditions at the Sibiryak sovkhos in Omsk Oblast:

<u>Predecessors</u>	<u>Number of fields studied</u>	<u>Total area in hectares</u>	<u>Grain gluten content in %</u>
Fallow.....	9	2,085	28.7
Wheat after fallow.....	11	4,564	25.7
Corn for silage.....	5	1,534	28.1
Wheat after corn.....	2	604	25.0
Millet after perennial grasses turnover.....	2	340	27.7

In the Volga region, according to data of Doctor of Agricultural Sciences A. Marushev, in addition to the fallow lands, good results were also attained after leguminous and intertilled crops and winter rye, and in wetter zones, after furrowed and turnover of furrowed perennial grasses.

The following results were obtained experimentally by I. Kalinenko and L. Chorba in Rostov Oblast with "Bezostaya-1" winter wheat:

<u>Predecessors</u>	<u>Content in %</u>			
	<u>Yield in quint/hect.</u>	<u>Natural mass/gr.</u>	<u>Raw protein in the grain</u>	<u>Raw gluten in 70% flour</u>
Bare fallow.....	50.8	817	15.4	37.2
Corn for silage.....	41.2	827	14.0	34.1
Barley and peavines.....	40.9	822	13.7	36.5
Sunflower.....	36.0	826	12.3	29.7
Cereal grains.....	33.2	819	12.9	31.8

With the development of scientifically substantiated farming systems in the kolkhozes and sovkhos of Russia, it became possible to improve the placement of winter and spring durum and strong wheat plantings. For the 1984 harvest 46 percent strong and 17 percent durum wheat were planted on fallow land in the zones of their commercial production. True, these figures are average. Almost no bare fallow fields are planted in durum wheats at the enterprises in Penza, Ulyanovsk, Saratov and several other oblasts. Little strong wheat is sown in bare fallow fields in the Orenburg region (16 percent), even less is planted here following leguminous crops (only 3 percent), and following perennial grasses (4.5 percent). A serious improvement in the composition of predecessor crops is also needed in a number of other oblasts.

The level of feeding the planted fields is an important factor in raising grain quality. Manure is rightfully considered to be the most valuable fertilizer. According to data of the Mironovskiy Scientific Research Institute of Selection and Seed Raising, the application of 20 tons of manure per hectare in comparison with control plots increased the gluten content in winter wheat grain in fallow fields by 1.2 percent, after perennial grasses by 0.7, after peas by 1.5 and after silage corn by 1.5 percent.

An even greater difference in gluten content is obtained with combined application of organic and mineral fertilizers, especially on fallow fields. According to data from the same scientific institution, the application of 10 tons of manure and $N_{15}P_{20}K_{20}$ increased the gluten content of grain after fallow field condition by 2.9 percent. At the same time, the grain unit and other technological properties of the grain were also improved.

Nitrogen fertilizers are of a decisive importance to increasing the gluten content of grain. But they are far more effective against a background of sufficient phosphorus feeding. By using leaf diagnostics methods it was established that the best conditions for gluten formation arise when the nitrogen and phosphorus ratio is on the order of 5:1 (or even less, depending on the zone). In any case, nitrogen must be predominant over phosphorus.

The time of application of fertilizers is also of extreme importance to the accumulation of gluten, which is the main indicator of the technological qualities of grain. It has been established that the primary application and early supplementary feeding of fertilizers in the spring have a greater effect on increasing the yield, while later applications (during the heading and ripening phases of the grain) lead to improving grain quality. Numerous experiments in various zones of the republic have established that non-root supplementary feeding with urea can raise the gluten content by 3-4, and at times by six percent.

According to data from experiments at the Krasnodar Agricultural Scientific Research Institute (N. Malyuga and N. Tarasenko) conducted in 1964-66, the effect of supplementary feeding with nitrogen during the grain heading period gave the following results in the quality and harvest yield of winter wheat of the "Bezostaya-1" variety in the Kuban' region:

<u>Experiment version</u>	<u>Grain Unit</u> <u>g/l</u>	<u>Grain content</u> <u>Raw gluten</u>	<u>in%</u> <u>Protein</u>	<u>Grain harvest</u> <u>quintal/hectare</u>
$N_{45}P_{90}K_{45}$ prior to sowing				
+ N_{45} in the spring.....	809	25.7	13.7	51.0
Supplemental feeding				
during heading period:				
N_{20}	817	27.2	14.5	51.3
N_{30}	818	28.5	14.7	51.7
N_{45}	820	29.2	14.8	51.6
N_{80}	818	30.7	15.1	51.8

Without affecting yield increase in any significant way, late nitrogen supplementary fertilization noticeably increased the gluten content of grain (in this case by five percent) and this index made it possible to raise the grain to the required GOST standard levels for strong wheat.

Supplemental nitrogen fertilization is of special importance in those regions where insufficient gluten is accumulated in the grain with usual agrotechnology techniques. Of course, according to GOST 9354-67 and 9353-67 standards, strong and durum wheat is determined not only by its gluten content, but also

by its quality, grain unit, moisture and presence of weed contaminants. But, as experience shows, it is gluten that is most often used to classify grain according to a technological grade.

In 1984 the kolkhozes and sovkhoses in the zone of commodity production of durum and strong wheats have planned to apply top dressing on 5.3-5.4 million hectares of fields. Success in carrying out this task will depend to a great degree on the organizational level of the effort: accumulation of the necessary quantities of urea fertilizer by the beginning of the work, use of agricultural aircraft, equipping of solution preparation stations and training of personnel. Naturally, leaf or stalk diagnostics must be carried out to determine the specific areas needing supplementary fertilization. According to preliminary data, stalk diagnostics carried out in Stavropol Kray showed that the plants on 28 percent of crop lands had a good supply of nitrogen and do not need supplementary feeding to produce strong grain. Grain on 38 percent of the fields requires one supplementary top dressing, and on 27 percent two top dressings are needed to produce grain meeting the standards for strong wheat.

Shell-bug infestation of grain has a pernicious effect on gluten quality. In some years this pest inflicts great damage to strong and durum wheat in the North Caucasus, Volga and some other regions. Even a slight infestation (one or two percent) results in the sharp reduction of the commercial value of the entire batch.

Pesticides should be applied at the time when the pest or its larvae emerge onto the planted fields. Delay of this work leads to deplorable results (this happened last year in a number of regions in North Caucasus).

Agricultural organs, the agrochemical service, managers and specialists of farm enterprises are responsible for having a precise plan for pest control and for implementing all measures efficiently, at proper times and in the necessary quantities. And for this it is necessary to create stocks of pesticides, train personnel, and organize efficient operation of solution preparation stations, agricultural aircraft and surface equipment.

Of course, this does not exhaust the agricultural problems of producing high quality grain: in every zone the best sowing times should be observed, varieties skillfully selected, it is necessary to "adapt" to weather conditions in cultivation, follow schedules in fertilizer and pesticide application, control weeds and determine harvesting methods and times.

A great deal also depends on how well-organized the preliminary estimate is of wheat quality in the fields. Workers of the grain procurement enterprises should be more widely enlisted in these efforts. It is necessary that before the harvest each field where good quality grain can be expected according to stalk and leaf diagnostics would be examined by commissions, so that schedules could be jointly compiled for threshing this grain, processing it, and for separate storage and delivery to the elevators depending on batch quality.

In such matters there can be no trifles, since a large quantity of good grain is obliterated due to organizational shortcomings. As the result, enterprises

lose considerable sums of money, and the State receives thousands of tons less wheat for filler additives for baking bread or durum (high grade) wheat for the production of noodle products and cereals. In 1982 Karasukskiy Rayon in Novosibirsk Oblast sent 1,503 tons of wheat to the elevators, which upon examination produced the following results: gluten content 31 percent (strong wheat has 28 percent), weed contaminants 3.4 percent (5 allowed), grain admixture 5.7 percent (up to 15 allowed), moisture 16.7 (19 allowed for the oblast), and grain units 750 grams (norm). But of this, only 30 tons of strong wheat and 954 tons of regular were procured. Quite obviously, with such indicators a great deal more strong grain could have been obtained with proper additional processing.

An important role in obtaining strong and durum wheats is played by the variety, its "reliability." Such well-known varieties of strong winter wheat as "Bezostaya-1," "Mironovskaya-808;" the spring wheats "Saratovskaya-29," "Saratovskaya-38," and "Novosibirskaya-67;" and durum wheats "Khar'kovskaya-46," "Almaz," "Altayka," and "Krasnokutka-6" have shown good results in this respect. Also deserving attention are many new varieties of strong and durum wheat, including winter forms of the latter. At the same time it would be desirable that the newly developed varieties of the intensive type would retain a maximum of the genetic basis of high-quality grain.

The production of high-quality grain requires well thought-out work, comprehensive solutions and thorough knowledge. The materials published in this periodical issue are intended precisely to assist specialists in many aspects of growing and delivering strong and durum wheat.

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CSO: 1824/599

TILLING AND CROPPING TECHNOLOGY

CULTIVATION OF DURUM WHEAT IN SOUTHEASTERN RSFSR

Saratov STEPNYYE PROSTORY in Russian No 6, Jun 84 pp 18-20

[Article by Doctor of Agricultural Sciences A. I. Marushev: "Where to Grow Durum Wheats"]

[Text] The steppe regions of the Volga area have always been famed for high quality varieties of durum wheat which supplied the raw materials for the noodle and cereal industry in many regions of the country.

It is well-known that in the past, durum wheat varieties were grown on fallow or virgin lands cleared of weeds. These soils contained large quantities of nutrients, chiefly humus.

At present there are no long-fallow lands, but, as it turned out, excellent noodle and cereal products can be made from durum wheat grown after other predecessors, which would have cleared the field of weeds. High soil fertility is ensured by application of appropriate fertilizers. In addition, the selection specialists at the Krasnokutsk State selection station of the South-East Agricultural Scientific Research Institute have raised new varieties significantly exceeding the ancient ones in their technological properties.

In recent years, more and more calls have been heard in the area famous for growing the best durum wheat, wishing for a revival of its former glory. It turns out that the Saratov noodle factory is not producing enough good noodle products due to the lack of the needed raw material--noodle flour.

The phenomenon deserves astonishment. There are famed selection specialists, the climate has not changed much, the steppe expanses of the right and left bank areas are as vast as ever, the same chestnut-colored soil, and the new, wonderful in quality varieties of wheat! Where and what is the cause? In our view, this lies in agricultural practices. Unfortunately we are still lacking in firm scientifically substantiated crop rotation data, have no thorough knowledge of the best predecessor crops, and do not always provide fertilizers for the soil. At times we do not adhere to the sowing and harvesting schedules. Durum wheat is more demanding than soft wheat in regard to cleanness of the fields, fertilization and soil moisture. A dropping out of one of the enumerated factors in growing it leads to a shortfall in the harvest yield and a drop in grain quality.

Now, the question of whether durum wheat should be planted in the right bank zone has become a controversial one. In the relatively recent past such a question had not arisen, plantings were successful on the right as well as on the left bank, and excellent grain was produced, and as a rule, the harvests in the right bank zone were higher.

It is completely obvious that the question of how to organize agricultural practices in order to grow good grain in the age-old regions of the left bank, where the main tracts of durum wheat plantings are located, needs a serious solution.

However, the right bank region, where excellent varieties of durum wheat have always been grown, such as Gordeiforme 432, Melyanopus 69 and a number of local varieties, must also not be forgotten.

Looking through a Canadian magazine I found out that commercial varieties of durum wheat in the nature of the grain, weight of 1,000 grains, translucence and protein content are no better than our right bank varieties. And recalled that in the 1950's I had occasion to be in Penza Oblast on a business trip, and in particular, I stopped at the Anuchinskiy Variety Selection Station where I saw splendid examples of standing durum wheat, and in the laboratory, samples of different varieties of grain which amazed me by their large size, amber-yellow color and fullness. Outwardly they looked as excellent as the ones in the Trans-Volga region. This led to the thought that the best varieties of durum wheat can be grown in the conditions of this region without loss of their natural properties. At my next visit to the experimental station I reached an agreement with its director at that time, I. A. Laykov, about organizing an experiment there in growing durum wheat. The work was performed jointly with scientific associate of the station D. S. Arbuzov.

We performed a special experiment with appropriate methodological arrangements. Initial high-quality seeds were selected of durum wheats Melyanopus-69 and Melyanopus-26 from the 1957 harvest in Krasnokutsk Selection Station. The seeds were planted in Saratov on a plot at the South-East Agricultural Scientific Research Institute, in Lunino on the fields of the Penza Agricultural Experimental Station (moisture-rich forest-steppe), and at the Krasnokutsk Selection Station (highly arid steppe climate). Subsequently, the seeds obtained at these stations were replanted every year at the same places. The initial data are presented for comparison.

In Saratov and Krasnyy Kut the wheat was sown on fallow land in chestnut-colored soil, and in Lunino on two-year clover fields and perennial grass chernozem soil. Precipitation recorded during the experiment period is in Table 1.

The year 1957 was very dry and, consequently, favorable for growing translucent and albuminous grain of all varieties of wheat. For this reason, the reproduction of such grain in a moisture-rich region must differ in physical, biochemical and technological properties (see Table 2).

After a brief analysis of Table 2 one can say firmly that on the whole, the grain is of high quality in all given primary properties, both technological and biochemical.

Table 1. Precipitation during the experiment period, mm.

<u>Months</u>	<u>Years of Experiment</u>				
	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
<u>Krasnyy Kut</u>					
May.....	15	29	31	23	44
June.....	9	34	32	16	13
July.....	5	36	34	17	34
Total.....	29	99	97	56	91
<u>Saratov</u>					
May.....	3	25	11	17	41
June.....	16	72	27	56	14
July.....	23	41	26	50	44
Total.....	42	138	64	123	99
<u>Lunino</u>					
May.....	-	46	4	22	68
June.....	-	53	59	26	22
July.....	-	68	21	55	38
Total.....	-	167	84	103	128

I. A. Laykov was one of the initiators of planting durum wheat in Penza Oblast, he felt that it would be more advantageous there than soft wheats. For example he presented the following data (see Table 3).

Unfortunately I am using somewhat obsolete data, having conducted no research on the subject since 1977. But I do not share the opinion that the right bank regions are unsuitable for the production of high-quality durum wheat. If it could have been grown in these regions previously, then at the present time there are wider possibilities for doing it. New excellent varieties have appeared, and the numbers of specialists have significantly increased.

I have worked in the agriculture of Saratov Oblast for half a century, having made many trips to the kolkhozes and sovkhoses of the left bank from Rovnyy to Pugachev, and from Volgograd to Kuybyshev on the right bank. For many years I was attached to the kolkhoz imeni Lenin in Vol'skiy Rayon. I have seen excellent plantings of durum wheat in the fields of the South-East Agricultural Scientific Research Institute, including at the seed-growing farming enterprise. I saw excellent tracts in the left bank region. But there is no point in hiding it--grain fields overgrown with wild oats were encountered there, which from a great distance could be mistaken for plantings of oats.

I have formed a firm conviction that the main reason for short harvests of durum wheat lies in incorrect agricultural practices, and first of all due to poor predecessor crops, insufficient application of fertilizers to the fields, predominance of weeds and agricultural pests, of course, especially shell-bug

Table 2. Changes in grain properties in wheat grown in different natural zones.

<u>Years</u>	<u>Melyanopus 26</u>			<u>Melyanopus 69</u>		
	<u>Krasnyy Kut</u>	<u>Saratov</u>	<u>Lunino</u>	<u>Krasnyy Kut</u>	<u>Saratov</u>	<u>Lunino</u>
<u>Grain translucence, %</u>						
1957.....	99	99	99	99	99	99
1958.....	94	100	78	100	100	90
1959.....	98	100	100	99	99	100
1960.....	90	99	95	98	99	98
Average..	95	99	94	99	99	97
<u>Grain Unit, g</u>						
1957.....	780	780	780	779	779	779
1958.....	770	796	761	800	804	767
1959.....	768	796	894	792	801	810
1960.....	793	787	779	800	755	757
1961.....	792	828	819	792	829	818
Average..	785	802	813	796	797	788
<u>Grain protein content, %*</u>						
1957.....	17.9	17.9	17.9	18.5	18.5	18.5
1958.....	18.0	18.2	16.4	16.8	18.2	18.8
1959.....	18.2	16.5	18.8	17.6	17.1	19.7
1960.....	16.8	15.8	19.8	16.7	16.6	20.4
1961.....	19.5	16.4	14.8	19.6	16.6	14.6
Average..	18.1	16.5	17.5	17.6	17.1	18.3
<u>Yield of first grade cereals, %</u>						
1957.....	61	61	61	59	59	59
1958.....	59	57	58	58	56	58
1959.....	61	61	53	60	59	54
1960.....	64	66	64	64	66	63
1961.....	65	65	62	64	63	63
Average..	62	62	60	64	61	60
<u>Strength of noodle products, g (d=3 mm)</u>						
1957.....	319	319	319	335	335	335
1958.....	358	349	414	401	366	430
1959.....	242	235	283	252	282	242
1960.....	497	428	478	476	452	496
1961.....	262	237	281	317	287	238
Average..	339	312	364	361	352	352

*The content of dry gluten in flour retained the same ratios.

and borers. The circumstance that at one time the farming enterprises were unwilling to plant durum wheat since its yield was lower than that of soft wheat was also a factor. Now there are high-yield varieties of durum wheat. I consider that it is time to introduce advanced agricultural practices in growing them. All necessary conditions for this exist. Therefore any argument about where these wheats should be planted is superfluous. They can thrive in many areas of the Volga region, where they are raised efficiently. Unquestionably this should be begun in the ancient places first of all--the left bank region of the South-East.

Table 3. Yield of durum wheats in Penza Oblast, quintal/hectare (according to I. A. Laykov)

<u>Varieties</u>	<u>Years</u>				<u>Average</u>
	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	
Soft wheat					
Lyutestsens 758 and Saratovskaya 29	13.1	16.9	19.7	17.1	16.7
Durum wheat					
Narodnaya and Khar'kovskaya 46	18.2	21.9	26.6	26.1	23.3

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CSO: 1824/599

FORESTRY AND TIMBER

BELORUSSIAN TIMBER MANAGEMENT PROBLEMS DISCUSSED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 26 Aug 84 p 2

/Article by N. Kernoga, Belorussian SSR: 'Upon the Command 'Set Afire!''

/Text/ The forestry fund of the BSSR is characterized by a low number of mature strains having only a negligible accretion. Over the next 15 years, the tree-felling area of Belorussia will increase only slightly and will not be able to satisfy the republic's requirements for wood. This is why such urgency is attached here to making complete and all-round use of all of the wealth being made available by our "green friend."

Much has been accomplished in this regard. The structure of the timber and wood-working industry has been improved. Production associations have been formed using small enterprises. For the very first time in the country, enterprises for the production of construction parts have been turned over to the BSSR Minlesprom /Ministry of the Lumber Industry/. Production associations have also been formed based upon these enterprises. Each such association specializes in the production of a particular product. The gathering up of waste scraps has been organized -- to be used as the raw material for the production of panels.

As a result of these and other measures, the coefficient for the all-round use of wood in the branch has increased from 0.67 in 1970 to 0.87 last year. The return being realized from each cubic meter has increased by one third: a cubic meter of wood is now furnishing 196 rubles worth of product.

The indicators for the wood-workers of the BSSR Minleskhoz /Ministry of the Forestry Industry/ are considerably worse. They are obtaining only one third of the above amount per cubic meter of wood. And what about the coefficient of use?

"We do not use such an indicator" replied the minister of forestry S. Moiseyenko, "Nor do we need it. A tree which we cut down is used completely, with no waste scraps remaining."

Is that so? I visited the wood processing department of the Borisovskiy leskhoz /forestry farm/. A pile of large tree-length logs was lying off to the side of a scaffold bridge used for cross-cutting. The logs had turned black in color and were covered with mould -- they had been lying on the ground for

approximately 2 years. I was informed by workers in the department that these logs, at one time 1st grade raw material, could now be used only for packaging materials.

As I listen to them I see clouds of smoke rising from behind a corner of the shop.

"Is it a fire?"

The workers did not make a move. One of them said:

"They are burning the waste scraps. They set them on fire this morning..."

Immediately behind the shop there were mountains of planks, boards and sawdust. The mountains began at the gates of the shop and continued down to the river. It was from this point that smoke was pouring. I approached and pulled a board out of the fire. I measured it: two and a half meters long, 2 centimeters thick and 17 centimeters wide. And there were many such boards there. These then were the waste scraps!

When I related to him what I had witnessed at the Borisovskiy leskhoz, Minister S. Moiseyenko stated:

"That was an exception."

But facts are facts and the ones I related indicated otherwise. When the leskhoz began to acquire their own production shops, it was assumed that their operations would be based exclusively upon the use of low grade and small items of wood. And what happened? Quite often 1st grade wood is used for making small planks, cuttings, packaging laths and unfinished furniture. Certainly, all of these products are needed. But is this really efficient use of wood -- the making of such products from large tree-length logs? If birch and pine logs are left to lie on the territory of a shop for a year or two, do they not decay and lose their quality? If the wood-workers now and then hear the command: "Light the fire," are they not committing to the flames materials than can and should be processed?

"Yes, we envy the wood of our neighbors" I was informed at the Borisovdrev Association, "If only we had such wood! We could then produce more products from it and utilize the wood in a more efficient manner."

I also heard such statements being made at other associations, the log frames of which were lying idle. And their neighbors, leskhoz workers, were at the same time obtaining chips from 1st grade wood. Why don't these neighbors share their experience with one another? It turns out that it is not possible -- different departments are involved.

The situation is a paradoxical one. One branch -- wood-working -- is developing in two ministries -- Minlesprom and Minleskhoz. As the saying goes, this is like heaven and earth in terms of technological equipping. In the leskhoz shops -- and there are more than 100 of them -- the equipment is very obsolete and there is very little mechanization. Yes and where are the machines and

mechanisms to come from if Minleskhov makes them available only on the basis of a program for forestry work.

Very little enterprise is being displayed within the ministry. Here is a clear example. At the Belorussian Technological Institute imeni S.M. Kirov, a highly productive machine for the processing of small items of wood was created. Three such machines were produced. One was recommended for use by Minleskhov. It was rejected by the ministry.

Departmental isolation is causing harm to the production of unfinished products. Minlesprom is carrying out this work using tree fellings of principal use and Minleskhov -- principal use and improvement cuttings. In essence, there are two bosses for the green tracts. Quite often they procure wood from the same areas and travel the same roads. True, Minleskhov arranges it such that the worst plots are assigned to Minlesprom. The arguments are usually as follows: the industrial workers have more and better equipment and also adequate manpower.

"The present structure of the republic's forest production line is not in keeping with the modern requirements" stated the rector of the Belorussian Technological Institute imeni S.M. Kirov, Professor V. Romanov. This same opinion was expressed by many other forestry specialists.

Several years ago executives of the republic's Gosplan, Minlesprom, Minleskhov and a number of institutes were tasked with studying the leading experience available in the country. They drew the conclusion that the timber combines which came into being in Ivano-Frankovsk Oblast constitute the most progressive form. On more than one occasion, articles have appeared in SOTSIALISTICHESKAYA INDUSTRIYA concerning these enterprises. They carry out an entire cycle of forestry, timber procurement and timber processing operations. In other words, they perform in the forest just as the grain growers do out on the fields.

Gosplan for the BSSR has submitted a recommendation to the Council of Ministers calling for the creation in the republic of a timber combine based upon the Borisovdrev Association. The plan calls for the Borisov, Krupki and Smolevichi leskhoz to be turned over to it. This must become the first stage in the program to introduce into operations the experience of the Ivano-Frankovsk workers, as approved by the CPSU Central Committee. However, USSR Minlesbumprom /Ministry of the Timber, Pulp and Paper and Wood Processing Industry/ and the republic's Minlesprom voted "for" and USSR Gosleskhov and BSSR Minleskhov -- "against." I acquainted myself with their objections. The chief ones seemed to be concerned with the fact that such a merging would result in forestry operations being neglected to please the wood working industry.

Proper credit must be given to the advocates of the new plan. They were not in agreement with this position. The chief of the Department of Timber, Paper and Wood Working Industry of the republic's Gosplan, G. Zdorovtsev, prepared detailed materials containing economic calculations on the work of the timber combines and on the status of the forests in the western Ukraine. It was proven in these materials that the elimination of the pause between the felling and planting of trees has produced a situation wherein the lands in the Carpathian region are once again covered with young forests.

Gosplan as requested that the BSSR Council of Ministers address itself once again to the question. Influence can be brought to bear upon USSR Gosleskhoz only by addressing an appeal to the higher union organs. However, such an appeal did not follow. This time all of the oblast executive committees raised objections against the creation of the timber combine. Why? Extreme importance was attached to the explanation for this development.

The solution for this strange phenomenon turned out to be rather simple. Actually, not all of the wood obtained by the leskhozes from improvement cuttings is centralized. A portion remains in the republic and is distributed by the Council of Ministers and the oblast executive committees. Thus the forestry oblasts enjoy a more advantageous position. They have non-funded construction material. The merging of the "Borisovdrev" and the leskhozes would signify a centralization of the timber resources.

Thus it would appear that the oblast executive committees had struck the bell. Thus the seniority position had closed ranks with the departmental position.

Is this not a departmental approach to the problem? Certainly not. True, wood is a renewable resource and it differs from oil, metal and coal in this respect. But should it not now be equated with them? All of it could then be distributed on a centralized basis, could it not?

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WATER RESOURCES AND LAND MANAGEMENT

MINISTER STRESSES LAND RECLAMATION IMPORTANCE IN AGRICULTURE

Moscow PLANOVYE KHOZYAYSTVO in Russian No 6, Jun 84 pp 3-10

[Article by USSR Minister of Land Reclamation and Water Resources N. Vasil'yev: "Land Improvement--An Important Factor in the Intensification of Agriculture"]

[Text] The Communist Party of the Soviet Union is constantly concerned about the development of agriculture in the country, viewing this task not only as an economic, but also as a paramount sociopolitical one. Special importance is attached to the fullest utilization of the great potential created in rural areas in order to significantly increase land productivity and the return from equipment, mineral fertilizers and capital investments.

"We proceed from the premise that a highly developed, effectively functioning agro-industrial complex is a necessary condition for a further increase in the material prosperity of the people and for increased efficiency of the entire national economy of the country,"* noted General Secretary of the CPSU Central Committee comrade K. U. Chernenko in his address to the All-Union economic conference on the problems of the Agro-industrial complex.

The main way to attain the objective is to speed up the shift of agriculture onto the rails of intensive development. The implementation of the decisions of the 26th CPSU Congress, subsequent CPSU Central Committee plenums and the Food Program of the USSR, approved by the May (1982) Plenum of the party, is already producing results: production and supply of agricultural products to the State are increasing, as are the level and balanced nature of the consumption of food products. However, this is only a beginning, a difficult task is ahead--attainment of higher goals in the production of agricultural products on the basis of broad expansion of land reclamation. Without complete expansion of land reclamation in our country, with all its enormous expanses and difficult natural and climatic conditions, it is impossible to make full use of other factors of intensified agricultural output.

*PRAVDA, 27 March 1984

It should be said that the party and the government have always attached enormous importance to land improvement. As far back as 17 May 1918, V. I. Lenin signed a decree on the irrigation of 500,000 dessiatinas of land in Turkestan and the construction of water engineering works.

In the decree by the Council on Labor and Defense "On the Struggle Against the Drought," signed by the chief of the revolution, it was indicated that the struggle against the drought must be recognized as a matter of paramount importance for the agricultural life of the country, and the measures taken in this direction as urgently important. Issues of land improvement were also reflected in the first long-range plan for development of the national economy--the GOELRO [State Commission on the Electrification of Russia] plan, called the second Party Program by V. I. Lenin.

The May (1966) Plenum of the CPSU Central Committee became an important stage, adopting a broad program of land improvement. The plenum raised this problem to the level of the most important State issues and declared to the party and the entire people that this is not a current campaign, but a program in the area of agriculture calculated for long-term implementation and requiring enormous efforts and considerable investment of capital and material and technical means. It is based on data of science and experience, on the realistic possibilities available to the Soviet economy.

At the September 1983 session of CPSU Central Committee Politburo it was noted that consistent realization of the Food Program requires that land improvement be raised to a qualitatively new level, making better use of its opportunities to increase the output of agricultural products and to increase the stability of agricultural practices. And further: "The accumulated experience, the created production base of water engineering facilities, and the existence of stable collectives of land improvement workers make it possible to place on the agenda and attain more complex and larger-scale goals in developing this sector on the basis of a comprehensive long-term program."*. And such a program, encompassing the period through the year 2,000, has been developed.

In May 1984 the CPSU Central Committee Politburo at its regular session discussed and approved the basic directions of the program of development of land improvement and increasing the efficiency of using irrigated and drained lands for the purpose of creating guaranteed food supply reserves.

During the last decade the areas of irrigated and drained lands in the country have significantly increased. At the present time

*PRAVDA, 17 September 1983

there are 33 million hectares of such lands, including 19 million hectares irrigated, versus 15.3 million and 9.5 million in 1965, and the proportion of agricultural products produced on improved lands has increased. These lands in the entire country now produce 34 percent of the total agricultural output, including 100% of the cotton and rice, 75 % of the vegetables, 50% of fruit and grapes, a quarter of the volume of rough and succulent fodder, and many other valuable products.

Special attention in the long-term program is devoted to the implementation of measures ensuring the obtaining of high returns from irrigated and drained lands on the basis of improvement of land condition, improvement of the use of water engineering systems, broad introduction of efficient irrigation methods, a rational sowing structure, measures of environmental conservation, and redistribution of water resources in the interests of the national economy.

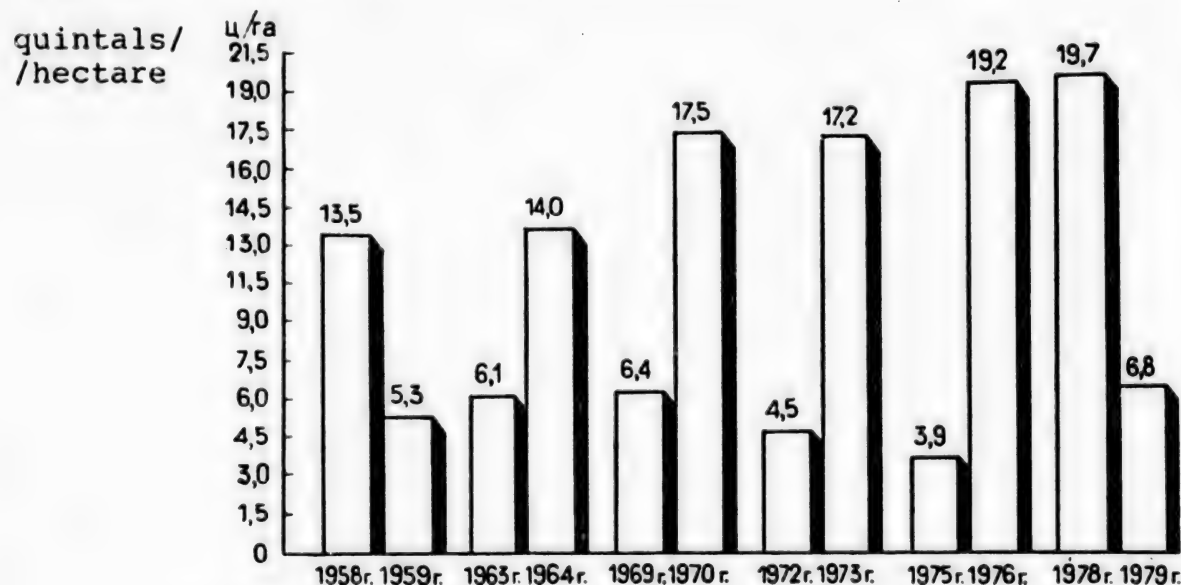
In our country there are practically no lands that do not need some measures or others to be taken to radically improve fertility. The larger part of agricultural lands is located in zones where repetitious droughts regularly occur. On the other hand, in the non-chernozem zone of the RSFSR, Belorussia and the Baltic region, large agricultural areas suffer from excessive moisture, and drainage is necessary for increasing their fertility.

But the most difficult thing in the area of agriculture is providing the necessary moisture for growing crops. In Central Asia and Southern Kazakhstan the precipitation reaches only 120-250 mm and agriculture without irrigation is practically impossible. Two-thirds of all lands in agricultural use in the country are located in the zone of insufficient moisture, less than 400 mm of precipitation falls on 40 percent of all arable land, and a sufficient quantity for a good harvest, over 700 mm, falls on only one percent of arable land.

The large granaries of the country are in the zone of insufficient precipitation: the Northern Caucasus, the steppe portion of the Ukraine, the Volga region, and the virgin lands of Siberia and Kazakhstan. The periodically repeated droughts lead to an instability of agricultural production. The diagram shows changes in the crop yield of grains in the alternation of "poor" and "good" years in terms of climatic conditions in Volgograd Oblast.

The entire period starting with the 1960's is characterized, as is well-known, by an increasing and extensive supply of modern equipment, fertilizers and all necessary investments to agriculture, which had a positive effect on the increase of the yield of agricultural crops in the best years in terms of climatic conditions: from 13.5 quintals/hectare in 1958 to 19.7 in 1978, although its growth rates were significantly lower than the rates for

accumulated investments. There are considerable reserves to increase the returns from the existing assets by raising the levels of economic operations of backward kolkhozes and sovkhoses to the indicators of the leading ones. However, further strengthening of the material and technical base cannot significantly increase the crop yield without land improvement, in particular in Volgograd Oblast, where the average annual precipitation is 250-400 mm.



Amplitude of fluctuations of the grain crop yield
in Volgograd Oblast

Member of the CPSU Central Committee Politburo, Secretary of the CPSU Central Committee M. S. Gorbachev noted at the All-Union Economic Conference that "the intensification process cannot be reduced to the accumulation of investments alone. The most important thing in intensification is increasing output production per unit of available and newly invested material and financial assets.

An enormous potential has been accumulated today in agriculture and in other sectors of the agro-industrial complex. The paramount task is to improve the utilization of all capacities and reserves, strengthen the weak links, make optimum use of available assets and improve their structure."*

These propositions have a special importance for the acceleration of land improvement construction, which would increase the crop yield and assist in the struggle against the drought, in obtaining stable harvests, and in efficient use of mineral fertilizers.

*PRAVDA, 27 March 1984

The use of mineral fertilizers on irrigated lands is especially effective. In experiments by the Ukrainian Scientific Research Institute of Irrigated Farming in Kherson Oblast (annual precipitation 350-400 mm) the total green biomass corn crop without irrigation or fertilizers was 228 quintals per hectare, the use of fertilizers (without irrigation) gave a crop increase of up to 24 quintals per hectare, and fertilizers and irrigation--303 quintals per hectare. Irrigation by itself without fertilizers increased the crop by 46.5 percent (up to 106 quintals/hectare), but the yield increase increment from using a combination of fertilizers and irrigation of 2.3 times more turned out to be higher (133%) than the sum of increases from fertilizers and irrigation separately (57%).

In Saratov Oblast the irrigated farming conditions are equal for all rayons and farming enterprises. But in Fedorovskiy Rayon 5-6 quintals of mineral fertilizers are applied per hectare for a return of 320 quintals per hectare of green perennials biomass, while in Pitserskiy Rayon these indicators are 10-11 and 515 quintals per hectare respectively, i.e., each quintal of fertilizer with irrigation results in an increase of nearly 40 quintals per hectare, and not 4-5 quintals per hectare as in the previous example without irrigation. The essence of this phenomenon consists of the so-called "interaction effect," which means a significant mutual increase of the effect of two or more quite definite factors when used in conjunction.

Unfortunately, this effect is not taken into account properly in planning production, distribution and use of fertilizers. Often the same quantities of fertilizers are allocated to irrigated and non-irrigated, drought-afflicted lands, which leads to a shortfall of harvesting many millions of tons of products of the plant and livestock raising industries. Thus a significant reserve of their potential remains unused.

For example, in the Ukrainian SSR in 1984 the volume of fertilizer deliveries to the oblasts was established on the basis of 240 kilograms per hectare of irrigated lands and 180 kg per hectare of drained land, but the total amount of fertilizers allocated for the entire republic for use on improved lands was 350,000 tons less. In Azerbaijan and Armenia only 65-115 kg of fertilizer is applied to feed crops per hectare, as opposed to 400-450 kg in accordance with scientifically substantiated norms.

On irrigated lands not only is the effectiveness of using fertilizers increased, but also that of using agricultural technology practices, such as tillage and cultivation, separation of lands into regions by varieties and the use of high-quality seeds. This makes it possible to make better use of the available assets and improve their structure.

But all these assets in drought zones cannot replace natural precipitation, the shortage of which limits the amount of the crop yield, and consequently the return from the assets. And all assets substantially increase returns with irrigation, which can be seen from the following calculations:

	<u>On reclaimed</u> <u>land</u>	<u>On non-reclaimed</u> <u>land</u>
State and kolkhoz capital investment in the expansion of plant growing in 1971-1980, billion rubles.....	44.95	79.7
Total increase of plant growing output in 1976-1980 compared to 1966-1970, billion rubles.....	32.6	12.0
Output increase per 1 ruble of capital investment, kopecks.....	73	15

In the 10th Five-Year Plan period almost three-quarters of the entire increase in the gross plant growing output was produced on improved lands. In the current five-year period the increase in the total vegetable harvest was completely attained due to land improvement measures; these lands were involved in 70 percent of the increase in feed production, and in half of the increase of fruit and grape output.

The intensive expansion of hydraulic engineering construction work is a characteristic trend in the development of semi-deserts and deserts--regions having the highest bioclimatic potential with irrigation--a sufficient amount of light and heat. The potential for irrigation in the USSR is practically unlimited. In Central Asia and southern Kazakhstan alone there are 58 million hectares of desert and semi-desert land, suitable for irrigation and use in the agricultural cycle. In southern Ukraine and North Caucasus the lands for potential irrigation cover more than 15 million hectares, and 6-7 million hectares in Stavropol Kray and the Kalmyk ASSR. In these regions it is possible to significantly increase the production of grain, feed and other products through irrigation.

The beneficial effect of agricultural techniques on the harvest is counted in weeks or seasons; the return from using fertilizers lasts for a year or several years, and economic fertility as a result of land improvement is retained for decades and centuries.

Thus it can be said that land improvement is a reliable means of increasing the productivity of enormous areas of land and that this is not only a concern for the present, but also of the future of agriculture. The land improvement assets of the country

are created by building hydraulic engineering projects. To accumulate these, 5-10 years are not sufficient; a considerably longer period is needed. This is a feature of land improvement and in this lies its difference from many spheres of material production.

New construction of land improvement projects is the primary way to enlarge the reclaimed lands assets, but also important are efforts to improve and rehabilitate previously built irrigation and drainage systems, revetment of canals, construction of a collector and drainage network, capital planning of fields, and crop culture technical work permitting the creation of optimum conditions for the growth and development of plants and the obtaining of high harvests. This work was begun in a planned manner and on an extensive scale following the May (1966) Plenum of the CPSU Central Committee. The plans for the 12th Five-Year Plan period and the future provide for a considerable intensification of attention to utilization of the existing improved land assets, irrigated and drained lands, land improvement systems, and for expanding the scope of crop culture technical work. As a consequence of shortcomings in the land improvement system and facilities, salinization and swamp-formation in the country as a whole, nearly 100,000 hectares of irrigated and 90,000 hectares of drained lands go unused annually. In 1983 kolkhozes and sovkhoses failed to irrigate 250,000 hectares of land for organizational and operations reasons.

Agricultural practices are violated at many enterprises, irrigation schedules are not maintained, watering frequency is insufficient, mineral and organic fertilizers are not applied in full quantities, the crop sowing structure is not developed, crop rotation is not sufficiently practiced, and agricultural crop programming on reclaimed lands is being introduced at a slow rate.

Farming enterprises with irrigated and drained lands are not supplied with sufficient equipment, mineral fertilizers and chemical pesticides. A significant portion of the irrigation equipment stands idle in kolkhozes and sovkhoses due to breakdown and malfunction, as well due to a shortage of machinery operators for irrigation machines and workers at pump stations. Liming of acidic soils is not performed on a sufficient scale, and in this connection, the effectiveness of applied mineral fertilizers is sharply reduced on drained lands.

These and other shortcomings reduce the effectiveness of land improvement measures, in many ways depreciating the enormous work accomplished by the party and the entire people on intensification of agricultural production.

The party demands an improvement in work methods and increased responsibility of economic organs for improved utilization of

served by the RPO (they are allocated 376,000 hectares in the entire country) the crop yield is 15-20 percent higher than the average in the krais and oblasts where these associations are operating. Expansion of this proven form of operation is retarded by insufficient financial allocations and the necessary material and technical resources (they are still not provided for in the plans).

It is necessary to organize one "Poliv" RPO in each of the new regions with irrigated agriculture with over 8-10,000 hectares of irrigated land by the end of the Eleventh Five-Year Plan. It would be advisable for the USSR Ministry of Finance and the USSR Gosplan to set aside financial and material resources for this purpose as well as additional funds for maintaining the intra-enterprise network and water management facilities in the amount of 500 million rubles annually. For farming enterprises with 1,000 or more hectares of irrigated lands, institute beginning with 1984 the programming of corn and feed harvests with centralized planned allocations of mineral fertilizers in the amount of 350-400 kg of active fertilizer per hectare. It is also necessary to put in order the allocation of material and technical resources to water management organizations for their operational needs in accordance with approved norms.

The attainment of these goals without delay is especially important because implementation of the Food Program of the country provides for the expansion of the area of improved lands in 1990, irrigated lands to 23-25 million hectares and drained lands to 18-19 million hectares. The use of improved lands in the 12th Five-Year Plan and in subsequent years will be subordinate to the implementation of a number of special programs--ensuring guaranteed production of grain, feed, soybeans, cotton, vegetables, melons, fruit and grapes in the necessary quantities. Improved lands will become the basis for the production of vegetables, melons, fruit and soybeans, as well as high-quality seed material in quantities satisfying the needs of the country.

An important condition for increasing the effectiveness of land improvement is extensive introduction of the results of scientific research into production and acceleration of scientific and technical progress. The basic directions of scientific and technical progress in land improvement are use of large-coverage sprinkling machines, automation and remote control of water distribution in irrigation systems, use of laser technology, trenchless closed drainage, wide use of polymers, and development of drainage-irrigation systems and new irrigation methods--drop, synchronous pulse, and fine-dispersal methods.

In the future it is planned to significantly expand efforts to build a network of agricultural watermain pipelines to provide a central water supply to the rural population. At the same time

irrigated and drained lands and attaining in the shortest possible time the planned yield of agricultural crops, especially rough and succulent fodder, grain and vegetables.

An important role in increasing the return from irrigated and drained lands is played by the hydrological engineering operations service. The value of fixed land improvement assets in the country has reached 34 billion rubles. Half of these--interenterprise networks and facilities (reservoirs, main water canals, large pump stations and water management facilities) which are on the balance sheet of the USSR Ministry of Land Reclamation and Water Resources operational organizations and are basically kept up in good working order, provide an uninterrupted supply of water for irrigation.

The other half of land improvement assets--canals, pump stations, the collector and drainage network, vertical drainage wells, water distribution facilities, panels, lifting mechanisms and automation, telemechanics and communications facilities are part of the intra-enterprise network, on the balance sheets of kolkhozes and sovkhozes, and are being operated considerably less well due to a shortage of qualified personnel, repair facilities, materials and a low level of technological discipline.

In as much as the inter-enterprise and intra-enterprise networks constitute a single system, it would be advisable, with the agreement of the enterprises, to transfer the intra-enterprise network to the balance sheet of State water management organizations which have a well-developed material and technical base to maintain it in good working order.

The financial costs of operations should be charged to budgeted operational funds. This would lead to ensuring good condition of the managed lands and improvement of water economy management systems, as well as to promoting high and stable levels of all agricultural crops.

In 44 administrative regions of various zones of the country there are functioning experimentally organized rayon production associations (RPO) "Poliv," which have taken over not only the intra-enterprise networks from the kolkhozes and sovkhozes, but the irrigation equipment as well. The "Poliv" RPO's are paid on a cost accounting basis for irrigating the agricultural crops and operate pumping stations, facilities and pipelines. As a rule their brigades and links work on the basis of a collective contract, having proven their high quality work, and are paid piece-work and bonus wages for work done.

The five-year operating experience of the RPO "Poliv" has confirmed the high efficiency of this form of organization of irrigation work in new regions of irrigated agriculture. On the lands

a waterpipe distribution network will be built, and work will be continued on the irrigation of over 70 million hectares of pasture land as well as on rehabilitation of water intake facilities on previously irrigated pastures.

In order to increase the water supplies in the European territory of the USSR, decisions have been made to shift a part of the runoff of northern rivers to the Volga Basin and to construct the new Volga-Don, Rostov-Krasnodar and Danube-Dnieper canals, as well as a dam across the Dnieper-Bug estuary.

In implementation of the decisions of the 25th and 26th CPSU Congresses, the USSR Ministry of Land Reclamation and Water Resources, the USSR Ministry of Agriculture, with the participation of the USSR Ministry of Power and Electrification, Ministry of the Fish Industry, the State Committee for Science and Technology, the USSR Academy of Sciences and the Academy of Agricultural Sciences imeni V. I. Lenin are working out the technical and economic substantiation of rerouting a part of the flow of Siberian rivers for the purpose of increasing the water supply of major regions.

The planned scope of land improvement construction and rehabilitation projects will require a further increase in the production capacities of enterprises of the USSR Ministry of Land Reclamation and Water Resources, increased material and technical resources of construction and operation organizations, expansion of the production and increased deliveries of land improvement machinery and equipment built by the industry: large-coverage sprinkling machines of the Fregat and Kuban' types, as well as machines and equipment for mechanized furrow irrigation.

Continuously increasing production will be needed of pumps and electrical drive equipment by the USSR ministries of Chemical and Petroleum Machine Building, the Electrical Equipment Industry, and of Instrument Making, Automation Equipment and Control Systems. Industry must master the production of new types of submersible pumps and complete unit pump stations.

Pipelines of polyethylene and polyvinyl chloride materials will displace metallic ones used in especially difficult construction conditions, and also in pipelines where the strength qualities of metal are not fully utilized. Increased deliveries of plastics will make it possible to cut the use of steel and cast iron pipe in half. The use of asbestos-cement pipes in land reclamation will make it possible to save a significant quantity of steel pipe. In order to do this, the USSR Ministry of the Construction Materials Industry needs to assure the production and delivery to the land reclamation projects of asbestos-cement pipe in the full required quantity.

For the construction of major canals and facilities for the diversion of river waters, the Ministry of Heavy and Transport Machine Building must significantly increase its deliveries of walking and quarry excavators; the Ministry of Construction, Road and Municipal Machine Building--of excavators and large-capacity bulldozers (up to 2.5 and 40 m³ respectively), tractor bulldozers of the 25-35 t class; and the Ministry of the Automobile Industry, of dump trucks with a capacity of over 12 t.

All land improvement construction is proceeding in close cooperation with organizations of the agro-industrial complex. The selection of land improvement projects takes place on the proposals of agricultural organizations with the participation of representatives of the USSR Ministry of Agriculture, the Ministry of the Fruit and Vegetable Industry, and of water resources management organizations.

The list of projects, as a rule, is approved by decision of oblast organizations. The design draft projects, indicating areas and types of land improvements, calculated yield of agricultural crops, construction cost, orientation of the enterprise and a number of other indicators, as well as the design developed from this are approved depending on the construction cost either by the USSR ministries of Agriculture, Land Reclamation and Water Resources and the Fruit and Vegetable Industry (with estimated construction cost exceeding 10 million rubles), or by their republic or oblast organizations (with estimated cost of under 10 million rubles).

The commissioning of all land improvement construction projects, in contrast to projects in other sectors of the national economy, is performed by commissions appointed by the councils of ministers of the Union republics and oblast soviet executive committees, depending on the cost of the project. The commissions are composed of representatives of agricultural organizations as well as of mandatory representatives of the farming enterprises to which the improved lands are being turned over for use. Without concurrence of the enterprise representative, the certificate of commission of improved lands for use is not approved. All inter-enterprise facilities are turned over for operation by water resource management organizations.

Land reclamation is a reliable guarantee for raising land fertility, intensification of agricultural production, giving it the ability to withstand unfavorable weather conditions, and also a means for increasing the effectiveness of utilization of the assets of all partners in the agro-industrial complex and strengthening relations among them.

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